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ABSTRACT

This annual report discusses several topics related to the work of the Clinical Center for Child Development at Hokkaido University in Sapporo, Japan. The articles are: (1) "The Study of Mothers' Parenting Practices with Child's Withdrawn Behaviors and Temperament" (Sueko Toda); (2) "Structure, Developmental Change, and Sex Differences in Temperament of Japanese Children" (Emiko Kusanagi, Nobuko Hoshi, Shing-Jen Chen); (3) "Emotion Communication of Japanese Mothers and Their Infants" (Nobuko Hoshi, Shing-Jen Chen); (4) "A Cross-Cultural Study of Facial Expressions of Emotion Using Multidimensional Scaling" (David Bimler, John Kirkland, Shing-Jen Chen); and (5) "Current Status of Learning Disabilities and Teacher Training Problems in Japan" (Satoshi Takizawa). Each article contains references. (KB)

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Shing-Jen Chen,
Takashi Furutsuka, Yukari Shirotani
With Assistance of Yumiko Sekino

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THE STUDY OF MOTHERS' PARENTING PRACTICES WITH CHILD'S WITHDRAWN BEHAVIORS AND TEMPERAMENT

Sueko Toda
Hokkaido University of Education

Abstract

To investigate the relationships between mothers' parenting practices and child withdrawal behaviors and temperament, two hundred and fourteen mothers, whose children (male 101, female 113) are enrolled in nursery schools in Kushiro participated with this project. Two questionnaires, parenting practices and child's temperament were filled out by mothers, and child's withdrawal behaviors were rated by teachers. The findings showed that child's active solitary behaviors were negatively correlated with mother's verbal encouragement parenting styles. Passive solitary behaviors were negatively correlated with autocratic parenting styles and positively correlated with emotional parenting styles. Reticence behaviors were negatively correlated with authoritative parenting styles. There were many associations between child temperament and parenting styles. The factors, emotional, unsociable and immature in temperament were positively correlated with authoritarian and its subfactors such as corporal punishment, no reasoning, autocratic, and directive parenting styles. Also, a factor, sociable was associated with authoritative and its subfactors such as warmth, verbal encouragement, easy going, reasoning, and democratic discipline parenting styles. Regression analyses showed that unstable, immature and emotional child temperament influenced mothers' authoritarian parenting styles and sociable child temperament influenced authoritative parenting styles. Further research is needed to find the relationships between child social behaviors and parenting practices including measurement.

Key Words: parenting practices, withdrawal behaviors, temperament, authoritarianism, authoritativeness

There are many studies about the relationship between mothers' parenting practices and child's social competence. Some studies have focused on the relationship between parenting practices and a child's aggressive behaviors. They have shown that specific parenting practices influence not only a child's social behaviors but also the child's personality, self concept, and academic achievement (Baumrind, 1991; Chao, 1994; Ladd & Sieur, 1995; Ladd & Golter, 1998; Ladd & Hart, 1992; Parke & Ladd, 1992; Steinberg, Lamborn, Dornbursch, & Darling, 1992). Parenting practices influence children's development through two ways; direct and indirect (Parke & Ladd, 1992). Variables which

directly or indirectly influence a child's social behaviors are family, interaction within the family, parenting practices, parent characteristics, attachment and so forth. Consequently, these direct or indirect factors influence a child's peer relationships. Belsky proposed a process model of the determinants of parenting (Figure 1). He considered that some factors such as parent personality, marital relations, social network, work, and child temperament determine parenting styles which then directly influence child development (1984). He argued that parent functioning is influenced by three major factors; personality, characteristics of the child, and contextual sources of stress and support. However, his model is based on non experimental and correlational studies, rather than on a cause-effect model.

The assessment of parenting practices generally follows a set of guidelines developed by Baumrind (1966). She proposed the existence of three parenting styles: authoritative, authoritarian, and permissive. Baumrind concentrated on parent responsiveness and demanding (control) as the principal factors of her measurement. The authoritative parent tends to direct the child's activities in a rational, issue oriented manner. She encourages the child to achieve and explains to the child the reasoning behind her methods and motives. Both autonomous self-fill and disciplined conformity are respectively valued by the authoritative parent (Responsiveness: high, Control: high). The authoritarian parent tends to shape, control, and evaluate the behavior and attitudes of the child in accordance with a set standard of conduct, usually an absolute standard, theologically motivated and formulated by a higher authority (Responsiveness: low, Control: high). The permissive parent tends to behave in a non punitive, acceptant, and affirmative manner toward the child's impulses, desires, and actions (Responsiveness: high, Control: low).

One strategy used in assessing Baumrind's three typologies was to obtain reports from adolescents concerning their own parent's parenting styles (Buri, 1991; Steinberg, et. al., 1992). The methodologies she used were parents' rating, psychologists' Q-sort, and behavioral observations. Block's Child rearing Practices Report (a 91 item Q-sort) was widely used for assessing the parents of young children. However, Block's parenting practices instrument has many factors (22 to 33). Both the questions of Baumrind's and Block's parenting practices have disadvantages as mentioned above. Some attempts have been made by researchers interested in socialization (Kochanska, Kuczynski, & Radki Yarrow, 1989; Trickett & Susman, 1988) to reduce the number of factors in the Block's report and make them more consistent with Baumrind's conceptualization (Chao, 1994).

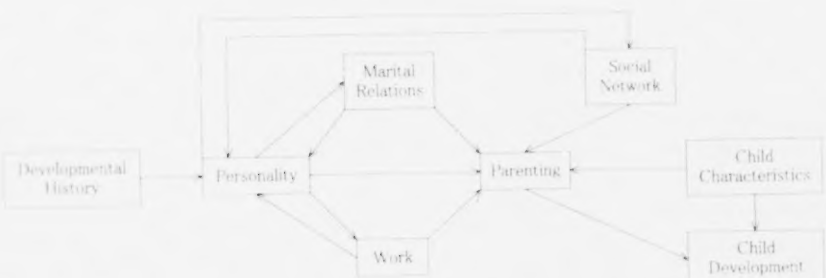

Figure 1 A Process Model of the Determinants of Parenting (Belsky, 1984)

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Robinson, Mandieco, Olsen, & Hart (1995) developed a new measure of parenting practices. The instrument, a questionnaire consisting of 133 questions, each with a 5-point scale, was developed using 80 items from Block's report and 53 new items to assess parenting practices of parents with young children. The 53 new items were constructed based on conceptualizations of authoritative, authoritarian, and permissive typologies drawn from the other literature. Their final questionnaire consists of 62 items. The results of the completed questionnaire items suggest that parenting practices consistent with Baumrind's three main typologies can be empirically derived, and the coherent factors identified within each typology may prove to be useful in predicting differential developmental outcomes (Darling & Steinberg, 1993). Therefore, in the present study, this 62 item questionnaire was used to assess the parenting styles of parents with preschool children, with the expectation that these three core parenting styles may be evident in Japanese cases.

Recently, some researchers have paid attention to a child's withdrawal behaviors as well as aggressive behaviors. Some researchers have found that a withdrawn child's adjustment to school life is highly problematic and the child is in some cases interpreted as dangerous by others (Harrist, Zaia, Bates, Dodge, & Pettit, 1997; Hart, Yang, Nelson, Jin, Olsen, Nelson, Wu, Robinson, & Porter, 1998). Asendorpf (1990) described a socially withdrawn child as immature, especially among peer relations as the child will show little interaction within the group. Consequently such children become maladjusted. Younger & Daniels (1992) argued that all withdrawn children are not maladjusted or dangerous. The characteristics of withdrawn children are born through the situation presented following the child's rejection by the peer group. Thus in frequent cases, these children have no choice but to play themselves. Although, it should be noted that some of these children prefer the solitary game. Rubin (1982) described solitary behaviors as consisting of two clusters: solitary passive and solitary active behaviors. Solitary passive behaviors describe such a child who will play alone with a toy, rather than join in with peers. The natural result of the interplay between biologically based and temperamental factors for solitary passive children is of course various forms of nonsocial activity. In early childhood, passive solitude is accepted by teachers and peers; however, these children negatively perceive themselves in terms of social competence. During middle childhood, they further develop their negative self-perception and consequently are rejected by such peers who hold the opinion that a passively withdrawn child's behaviors are deviant. (Rubin & Mills, 1988). Solitary active behaviors are defined as behaviors that children like sensory-motor play or solitary dramatic play, and they are immature in development, including children rejected by peers. Later, Rubin (1991) added one more cluster to his model, reticence. Reticence is defined as a prolonged looking at the partner without accompanying play. Coplan et al. (1994) duplicated Rubin's study, and they found that reticent behaviors, not solitary passive or solitary active behaviors, were correlated with anxiety, and maternal ratings of shyness. They also found the reticent behaviors were associated with hovering on the edge of social groups. These behaviors were consistent with evidence for the existence of an approach-avoidance conflict explained by Asendorpf's study (1991). Rubin and Mills (1988) proved that these withdrawal behaviors were associated with attachment and temperament in early childhood, and later these behaviors

generate internalizing problems.

Several studies on temperament in infancy and early childhood are circulating at present. The New York Longitudinal Study (Thomas, Chess, & Birch, 1968) prompted researchers to pay attention to temperament studies. Temperament is considered the innate characteristics of a child during his/her infancy and childhood (Buss & Plomin, 1984). They proposed 4 dimensions: Emotionality, Activity, Sociability, and Impulsivity. In infancy, the Revised Infant Temperament Questionnaire (Carry & McDevitt, 1978) is widely used; however, these temperament measurements always question the issue of reliability and validity as the majority of the temperament measurements are based on the mother's ratings, and observations and the mother's ratings are at times not correlated with each other. Hubert, Waches, Peters Martin, & Gandour (1982) reviewed the study of temperament, and they showed that only one factor (sociability) was consistent with the New York Longitudinal Study. As mentioned above, Belsky (1984) noted child temperament is one of the main factors influencing parenting. Rubin, LeMare, & Lollis (1990) proposed two processes based on temperament that explain the reasoning behind withdrawn children being rejected by their peers during middle childhood. The first process is based on the difficulty faced during infancy. The mothers of difficult infants create conflict regarding childrearing, as they try to exercise complete control over their children. This form of behavior closely models the authoritarian parenting style mentioned previously. The second process is a case of low threshold in social stimulus or novelty. Mothers develop hostility, aggressive behaviors and a lack of sensitivity because the child's characteristics are described as low threshold in social stimulus or novelty. Thus, the bond between the mother and infant is relatively insecure. In summary, negative perception of a child during infancy and early childhood results in the child developing detrimental withdrawal behaviors, these behaviors consequently become a basis for rejection by peers during middle childhood. The studies presented before suggest that a core element associated with withdrawal behaviors and parenting practices is temperament.

The present study aims to examine a process model proposed by Belsky (1984), which focuses on the relationship among parenting practices, child withdrawal and temperament. It is expected that specific factors in these three domains correlate with each other. The purpose of the model is to try to find which factor in one domain is associated with factors in the other domains.

Method

Subjects: Two hundred fourteen mothers, whose children (male=101, female=113) are currently enrolled in 10 nursery schools in Kushiro, participated with this project. The average age of the children was 64 months (Range 39-81 months). The mother's age was 34 years old and the father's age was 36 years old. Education wise, the mothers had attended schooling for approximately 12.6 years and the fathers for approximately 13.3 years. Slightly more than half of children had one sibling (no sibling 53, one sibling 109, two 43, three 9).

Procedure: Questionnaires were handed to the children to be passed on or directly handed to each mother. Two weeks later, they were collected. It should be noted that this particular study is only a small part of a larger project and during the time of its

completion. Mothers were required to complete two questionnaires, Parenting practices and child temperament. Questions concerning a child's withdrawal behaviors were completed by teachers, thus based on classroom mannerisms. The questionnaires used in the present study have been introduced from the United States and were translated into Japanese.

Questionnaires: Two different questionnaires were completed by the participating mothers and a further one by the concerned teachers. Mothers were required to self-rate the attitudes and behaviors of their children, and their child's characteristics.

Mother's Parenting Practices: The parenting practices questionnaire consists of 62 items. The items were scored on a 5-point scale (1) "Never" to (5) "Always."

Child Withdrawal Behaviors: The questionnaire consists of 44 items concerning various withdrawal behaviors. The items were scored on a 3-point scale (0) "Never" to (2) Very often." Child Temperament: The temperament questionnaire consists of 52 items. The items were scored on a 5-point scale (1) "Not typical of the child" to (5) "Very typical of the child."

Results

Principal axis factor analyses followed by varimax rotation for each questionnaire resulted in the determination of factor structures. Following this, correlation analyses between factors were carried out for all of the questionnaires. In regards to parenting practices, first, three factors were extracted from the items hypothesised in Baumrind's typologies, then, factor analyses followed by varimax rotation for each factor were carried out. As shown in Table 1,five subfactors were extracted from factor 1 (Authoritarian), five subfactors from factor 2 (Authoritative), and three subfactors from factor 3 (Permissive).

Under child withdrawal behaviors, five factors were extracted (Solitary passive, Solitary active, Reticence, Shyness/Fair, Emotional/Immature). Seven factors were extracted from child temperament (Energetic/Active, Emotional, Unstable, Sociable, Depressive, Immature, Adult-like).

Table 1 shows factor scores in parenting practices. In general, the authoritative parenting style and the subfactors, especially factors of "easy going/affect expression" and "democratic discipline" had the highest scores in the three parenting styles. The results show that mothers rated highly the authoritative parenting style and consequently consider authoritarian and permissive parenting styles as less important. However, the authoritarian parenting practices were extracted as factor 1. The "easy going" factor was given the highest scores by mothers in general. This means that as mothers are rearing their children, they are promoting an easygoing lifestyle. Table 2 shows factor scores in child withdrawal behaviors. The mean score is the total score calculated by adding each item's score in each factor. It is noteworthy to describe the maximum scores in each factor. When we look at minimum and maximum scores, the suggestion is that child withdrawal characteristics highlight individual differences. For example, in the solitary passive factor, some children scored 23 points (the highest score is 24 points), these children can then be said to show very passive solitary behaviors.

Table 1 Factor Scores in Mothers' Parenting Practices

Factor		Mean (SD)
Factor 1	Authoritarian	2.27(.46)
Subfactor 1	Corporal Punishment	2.23(.74)
Subfactor 2	No-Reasoning/Punitive Strategies	1.78(.49)
Subfactor 3	Autocratic	2.17(.64)
Subfactor 4	Directiveness	3.02(.87)
Subfactor 5	Emotional/Disciplining Strategies	3.41(.64)
Factor 2	Authoritative	3.76(.46)
Subfactor 1	Warmth & Involvement	3.40(.65)
Subfactor 2	Verbal Encouragement	3.45(.74)
Subfactor 3	Easy Going/Affect Expression	4.29(.62)
Subfactor 4	Reasoning/Induction	3.66(.70)
Subfactor 5	Democratic Discipline	4.14(.78)
Factor 3	Permissive	2.13(.34)
Subfactor 1	Ignoring Misbehavior	1.19(.37)
Subfactor 2	Child Centered	2.31(.53)
Subfactor 3	Indulgent	2.76(.71)

Table 2 Factor Scores in Child's Withdrawn Behaviors

Factor (Total of items)	Mean(SD)	Maximum	Minimum
Solitary Passive (12)	2.21(3.86)	23.00	0.00
Solitary Active (11)	.99(2.55)	18.00	0.00
Reticence (10)	1.21(2.56)	18.00	0.00
Shyness/Fair (7)	1.83(2.37)	13.00	0.00
Emotional/Immature (4)	1.41(1.53)	8.00	0.00

The relationship between parenting practices and a child's withdrawal behaviors

Table 3 shows the relationship between parenting practices and a child's withdrawal behaviors. Many parenting styles could not be correlated with some withdrawal behaviors. Emotional parenting styles were positively correlated with solitary-passive behaviors ($p<.05$) and autocratic parenting styles were negatively correlated with solitary passive behaviors ($p<.05$). Regression analyses proved that both emotional and autocratic parenting styles contributed to a child's solitary passive behaviors ($p<.05$). Verbal encouragement parenting styles were negatively correlated with solitary active behaviors ($p<.01$). Authoritative and democratic disciplinary parenting styles were negatively correlated with "reticence" ($p<.05$). Regression analyses showed that democratic disciplinary parenting styles significantly influenced "reticence" ($p<.05$). Also democratic disciplinary parenting styles were negatively correlated with the shyness/fair behavior ($p<.05$). Permissive and indulgent parenting styles were negatively correlated with emotional/immature behaviors ($p<.05$). The results did not show a strong association between parenting styles and child withdrawal behaviors, and most factors show negative associations between them.

The relationship between parenting practices and a child's temperament

Table 4 shows the association between a mother's parenting styles and the child's

temperament. Although many factors are correlated with each other, some characteristic associations between factors are visible. When attention is paid to factors which are significant at $p<.01$ & $p<.001$ level, emotional child temperament was positively correlated with the authoritarian parenting style ($p<.001$) and with the subfactors, "corporal punishment" ($p<.01$), "no reasoning" ($p<.001$), and "directiveness" ($p<.001$), and negatively correlated with "democratic discipline" ($p<.001$). The factor, "unstable" was positively correlated with authoritarian parenting styles ($p<.001$) and 4 subfactors, "corporal punishment" ($p<.001$), "no reasoning" ($p<.001$), "autocratic" ($p<.01$), and

Table 3 Correlation between Mothers' Practices and Child Withdrawal Behaviors

Parenting Practices	Child Withdrawn Behavior					
	Passive Solitary	Active Solitary	Reticence	Shyness/Fair	Emotional	Immature
Authoritarian						
Corporal Punishment						
No Reasoning						
Autocratic	.145*					
Directiveness						
Emotional	.163*					
Authoritative			.146*			
Warmth & Involvement						
Verbal Encouragement		-.217**				
Easy Going/Affect						
Reasoning/Induction						
Democratic Discipline			-.170*	-.141*		
Permissiveness						.148*
Ignoring Misbehavior						
Child Centered						
Indulgent						.155*

*p<.05 **p<.01 ***p<.001

Table 4 Correlation between Mothers' Parenting Practices and Child Temperament

Parenting Practices	Child Temperament							
	Energetic	Active	Emotional	Unstable	Sociable	Depressive	Immature	Adult like
Authoritarian			.302***	.360***			.306***	.187*
Corporal Punishment			.207**	.271***			.245***	
No Reasoning	.141*		.333***	.293***	.194**		.311***	.183**
Autocratic				.209**	.143*			.154*
Directiveness			.203**	.241**		.176*	.160*	
Emotional								
Authoritative			.163*	.163*	.291***			
Warmth & Involvement					.237***			
Verbal Encouragement					.235***			
Easy Going/Affect				.138*	.222***			
Reasoning/Induction			.146*		.144*			
Democratic Discipline			.265***		.235***			.143*
Permissiveness								
Ignoring Misbehavior					.162*			
Child Centered					.152*			
Indulgent								

*p<.05 **p<.01 ***p<.001

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"directiveness" ($p<.001$). The factor, "sociable" was positively correlated with authoritative parenting styles ($p<.001$) and subfactors, "warmth" ($p<.001$), "verbal encouragement" ($p<.001$), and "easy going" ($p<.001$). However, this factor negatively correlated with the subfactor, "no-reasoning" listed under authoritarian parenting styles ($p<.01$). Immature behaviors were positively correlated with authoritarian parenting styles and subfactors, "corporal" ($p<.001$), and "no-reasoning" ($p<.001$). The factor, "adult-like" was positively correlated with the subfactor, "no-reasoning" under authoritarian parenting styles ($p<.01$). The question of which parenting style (authoritarian, authoritative, or permissive) is influenced by a child's temperament is examined by multiple regression analyses with stepwise methods. As table 5 shows, three factors, "unstable", "immature", and "emotional" significantly influence authoritarian parenting styles. Two factors, "sociable" and "emotional" significantly influence authoritative parenting styles. The factor, "unstable" was not significant. The results suggest that mothers with authoritarian parenting styles have a tendency to consider their children unstable, immature, and emotional. Whereas mothers with authoritative parenting styles have a tendency to consider their children sociable and not emotional. The findings suggest that it is the child's characteristics that determine the mother's parenting styles.

The relationship between withdrawal behaviors and temperament

There are few associations between withdrawal behaviors and temperament. "Passive solitary" was negatively correlated with "energetic" in temperament ($r=-.145$, $p<.05$). "Reticence" was negatively correlated with "energetic" and "sociable" factors in temperament ($r=-.192$, $p<.01$; $r=-.138$, $p<.05$). "Shyness/Fair" negatively correlated with "energetic", "sociable", and "adult-like" factors ($r=-.397$, $p<.001$; $r=-.171$, $p<.05$; $r=-.161$, $p<.05$). The results showed that a child's negative characteristics as rated by the mother was also similar to those characteristics considered negative by the teacher.

Discussion

In the present study, we examined Belsky's process model that parenting practices

Table 5 Multiple Regression Analyses Predicting Parenting Styles

Step and Variable	Beta	R	R^2	T
Authoritarian (Criterion)				
Temperament Subfactors				
1 Unstable	-.352	.352	.12	5.02***
2 Immature	.265	.437	.18	4.28***
3 Emotional	.172	.465	.20	2.38*
4 Adult-like	.044	-	-	.63
Authoritative (Criterion)				
1 Sociable	.280	.280	.07	3.84***
2 Emotional	-.153	.319	.09	-2.12*
3 Unstable	-.104	-	-	-1.40

*p<.05 **p<.01 ***p<.001

are associated with a child's withdrawal behaviors and temperament. The findings were proveu in part but the relationships were not salient, especially the relationship between parenting practices and withdrawal behaviors. The reason may be that the mothers' and teachers' rating criteria differed. Parenting styles and temperament are rated by mothers, whereas child withdrawal behaviors are rated by teachers. Therefore, the correlation between parenting and withdrawal behaviors is not much stronger than the correlation between parenting styles and temperament. That is, an unstable child's characteristics influence the mother's authoritarian parenting practices, and a sociable child's characteristics influence the mother's authoritative parenting practices. Emotional parenting styles also influence solitary passive behaviors. The results were consistent with Rubin et. al.'s proposal (1990). That is, unstable children were difficult during infancy, and thus controlled by their mothers. Authoritarian parenting styles may be the outcome of controlling difficult infants. Further research including parent characteristics, observations and peer ratings is needed to identify the unique linkages of subtypes of withdrawal behaviors and temperament to parenting practices.

Concerning the parenting practices questionnaire, a measurement developed in the United States was used. In the American samples, only three factors were extracted from the 62 items listed. In contrast, the Japanese samples, extracted as many as 21 factors in the first step, although the factor analyses failed to conduct a varimax rotation. Therefore, the procedure taken by the American studies was followed. That is, at first, three factors are specified, and then for each factor several subfactors are extracted. Almost all items were clearly classified into three factors (Authoritarian, Authoritative, and Permissive parenting styles), although some factor loadings were low. The fact that many factors were extracted from Japanese parenting practices items suggests that Japanese mothers have more of a multidimensional parenting style than do American mothers.

In the present study, withdrawal behaviors have five dimensions : passive solitary, active solitary, reticence, shyness/fair, and emotional/immature. Compared to other research, their results showed three withdrawal behaviors (passive, active, and reticence) ; shyness was included in reticence and immature was included in solitary active behaviors. Chen, et al. (1995) found that shy children were accepted by peers in childhood (8-10 years), but two years later (middle childhood), they were rejected by peers. In general, shyness is negatively viewed in Western cultures, but of Asian cultures, it is positively viewed, and accepted by people in young ages as Chen et al. found. This is true in Japanese culture, and the concept of shyness may have the same meaning as in China. In Japan, an adult's feeling about shyness has two dimensions, negative and positive. Much depends on the context or situation ; however, the concept of shyness is culture-specific to Japan. Therefore, as the findings showed, shyness may be independent of reticence, albeit shyness is viewed as a withdrawal behavior. Further research is needed to clarify the unique linkages between parenting practices and withdrawal behaviors from a cultural viewpoint.

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Appendix 1. Mother's Parenting Practices

Factor 1: Authoritarian				Alpha = .85	
Item	M	SD	Load		Subfactor 1 (Corporal Punishment)
06.	2.3	1.2	.777	Spanks when child is disobedient.	
37.	1.8	.8	.694	Uses physical punishment as a way of disciplining our child.	
43.	2.5	1.2	.691	Slaps child when the child misbehaves.	
34.	1.9	1.0	.613	Threatens child with punishment more often than actually giving it.	
19.	2.0	1.0	.568	Grabs child when being disobedient.	
13.	2.9	1.2	.505	Yells or shouts when child misbehaves.	
					Subfactor 2 (No Reasoning/Punitive Strategies)
41.	2.4	.8	.615	Disagrees with child.	
61.	1.7	.9	.601	Shoves child when the child is disobedient.	
57.	1.9	.9	.597	Appears unsure on how to solve the child's misbehavior.	
14.	1.9	1.2	.565	Is easy going and relaxed with child.	
10.	1.7	.9	.477	Punishes by taking privileges away from child with little if any explanations.	
02.	1.8	.8	.469	Guides child by punishment more than by reason.	
28.	1.2	.5	.414	Punishes by putting child off somewhere alone with little if any explanations.	
54.	1.4	.7	.413	Uses threats as punishment with little or no justification.	
50.	2.0	1.0	.410	Scolds or criticizes when child's behavior doesn't meet our expectations.	
26.	2.3	.9	.374	Appears to be more concerned with own feelings than with child's feelings.	
					Subfactor 3 (Autocratic)
30.	1.4	.9	.647	Is afraid that disciplining child for misbehavior will cause the child to not like his/her parents.	
08.	3.3	1.1	.588	Withholds scolding and/or criticism even when child acts contrary to our wishes.	
16.	2.0	.9	.550	Tells child our expectations regarding behavior before the child engages in an activity.	
56.	2.0	1.2	.505	When child asks why he/she has to conform, states: because I said so, or I am your parent and I want you to.	
					Subfactor 4 (Directiveness)
40.	3.3	1.2	.766	Tells child what to do.	
59.	2.9	1.2	.599	Demands that child does/do things.	
17.	2.8	1.2	.566	Scolds and criticizes to make child improve.	
					Subfactor 5 (Emotional/Disciplining Strategies)
39.	1.3	.9	.608	Bribes child with rewards to bring about compliance.	
04.	3.7	1.3	.573	Finds it difficult to discipline child.	
32.	2.3	1.0	.365	Explodes in anger towards child.	

Factor 2: Authoritative				Alpha = 79	
Item	M	SD	Load.		Subfactor 1 (Warmth & Involvement)
12.	3.4	1.1	.688	Gives comfort and understanding when child is upset.	
09.	3.5	1.1	.624	Shows sympathy when child is hurt or frustrated.	
52.	3.0	1.2	.550	Sets strict well established rules for child.	
55.	4.0	1.1	.547	Takes into account child's preferences in making plans for the family.	
21.	3.3	.9	.432	Is responsive to child's feelings or needs.	
33.	3.2	1.1	.367	Aware of problems or concerns about child in school.	

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				Subfactor 2 (Verbal Encouragement)
51.	3.7	1.0	.666	Shows respect for the child's opinions by encouraging child to express them.
48.	3.5	1.2	.610	Encourages child to freely express himself/herself even when disagreeing with parents.
58.	3.4	1.3	.541	Explains the consequences of the child's behavior.
62.	3.2	1.2	.536	Emphasizes the reasons for rules.
53.	3.6	1.2	.456	Explains to child how we feel about the child's good and bad behavior.
				Subfactor 3 (Easy Going/Affect Expression)
07.	4.1	1.0	.765	Jokes and plays with child.
35.	4.4	.8	.647	Expresses affection by hugging, kissing, and holding child.
05.	4.5	.9	.574	Gives praise when child is good.
39.	4.1	1.2	.418	Apologizes to child when making a mistake in parenting.
46.	4.4	1.0	.403	Has warm and intimate times together with child.
				Subfactor 4 (Reasoning/Induction)
01.	4.2	1.1	.638	Encourages child to talk about the child's troubles.
38.	3.3	1.4	.511	Carries our discipline after child misbehaves.
29.	3.3	1.3	.507	Helps child to understand the impact of behavior by encouraging child to talk about the consequences of his/her own actions.
47.	2.8	1.5	.476	When two children are fighting, disciplines children first and asks questions later.
27.	4.5	.9	.390	Tells child that we appreciate what the child tries accomplishes.
				Subfactor 5 (Democratic Descipline)
22.	3.8	1.3	.709	Allows child to give input into family rules.
42.	4.4	.9	.689	Talks it over and reasons with child when the child misbehaves.
25.	4.2	1.1	.441	Gives child reasons why rules should be obeyed.
Factor 3. Permissive				Alpha = .33
				Subfactor 1 (Ignoring Misbehavior)
15.	1.1	.4	.827	Allows child to annoy someone else.
45.	1.1	.3	.812	Allows child to interrupt others.
03.	1.5	.9	.408	Knows the names of child's friends.
Item	M	SD	Load	Subfactor 2 (Child Centered)
18.	2.1	.9	.569	Shows patience with child.
36.	1.1	.4	.556	Ignores child's misbehavior.
60.	3.4	1.3	.547	Channels child's misbehavior into a more acceptable activity.
41.	2.1	1.1	.474	Gives into child when he/she child causes a commotion about something.
20.	2.8	1.3	.310	States punishments to child and does not actually do them.
				Subfactor 3 (Indulgent)
11.	2.3	1.0	.658	Spoils child.
23.	3.2	1.3	.505	Argues with child.
31.	2.8	1.1	.484	Takes child's desires into account before asking the child to do something.

Appendix 2. Child's Withdrawn/Solitary Behaviors

Factor 1. Unsociable Alpha = .93

11. Would rather play alone.
36. Builds things by self rather than with other children.
20. Swings by self, alone, away from peers.
26. Reads books alone, away from others.
33. Likes to play alone.
13. Does artwork by self, away from others.
41. Plays with toys by self rather than with other children.
15. Does constructive activities (e.g., build with blocks, legos) or does puzzles alone, away from others.
06. Tends to do things on his/her own, rather solitary.
24. Animates toys (e.g., pretends an inanimate object doll or stick is alive) by self, away from peers.
19. Does pretend/dramatic play by self, away from peers.
29. Waits and hovers around other children without joining in play.

Factor 2. Rejected withdrawal Alpha = .91

34. Other children tell him/her that he/she cannot play with them.
37. Not much liked by other children.
05. Says nobody likes him or her.
08. Is ignored by others.
23. Other children exclude him/her.
39. Is told to go away by other children.
25. Has trouble making friends.
35. Talks aloud or sings dramatically around peers when they are doing similar things but does not interact with them while doing so.
30. Can't get others to play with him/her.
01. Other children seem unwilling to play with this child.
42. Doesn't listen to what others say.

Factor 3. Hovering around peers Alpha = .90

12. Appears to be doing nothing.
43. Appears lonely.
17. Pretends to be something (e.g., fireman, doctor, airplane) in vicinity of peers doing similar things but does not interact with them while doing so.
16. Stares at other children without interacting with them.
09. Animates toys (e.g., pretend an inanimate object such as a doll or stick is alive) in the vicinity of peers doing similar things but does not interact with them while doing so.
18. Is tearful in approaching other children.
40. Is unoccupied even when there is plenty to do.
14. Is easily embarrassed.
02. Wanders aimlessly when outdoors or during free play.
31. Does pretend/dramatic play with peers, but does not interact with them while doing so.

Factor 4. Shyness/Afraid Alpha = .83

21. Is quiet around other children.
38. Is very shy.
22. Doesn't talk much with other children.
27. Watches other children play without joining in.
07. Is reserved around other children.
04. Shies away when approached by other children.

32. Shows anxiety about being with a group of children.

Factor 5. Emotional/Immature Alpha = .63
03. Is off task and preoccupied.
14. Pouts or sulks.
10. Cries over seemingly little things.
28. Feelings get hurt easily.

STRUCTURE, DEVELOPMENTAL CHANGE, AND SEX DIFFERENCES IN TEMPERAMENT OF JAPANESE CHILDREN

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Abstract

In this study, we addressed three issues using parental report temperament questionnaires: the structure and developmental change of temperament from three- to six-year old children using the Children's Behavior Questionnaire (CBQ) scales, and sex differences using the Toddler Behavior Assessment Questionnaire (TBAQ) and the CBQ scales. The subjects were 483 Japanese children at eighteen months for the TBAQ and 372 3- to 6-year-olds for the CBQ. Factor analyzing the results from 15 CBQ scales, three factors (Surgency, Negative Affect, and Effortful Control) were obtained. The factor pattern we obtained showed considerable similarity to those for America and China samples reported previously by other researchers, a finding supporting the invariance of underlying structure of temperament across cultures. Comparing the factor loading patterns of the three nations, Japanese children's temperament occupied a middle position. This suggests that the development of temperament might be influenced by children's experiences in socialization which varied according to culture. We found sex differences for the Activity Level, High Intensity Pleasure, Impulsivity, Inhibitory Control, Low Intensity Pleasure, Perceptual Sensitivity, and Shyness scales of the CBQ, but not for the TBAQ scales. Boys were rated higher on the scales related to the Surgency factor, and girls were higher on the scales related to the Effortful Control. As expected, Anger and Discomfort scale scores decreased, and Attention Focusing and Inhibitory Control scale scores increased with age.

Key Words: temperamental structure, developmental change, sex difference, Japanese children

Introduction

Over the past few decades, there has been an increase in temperament research in Western countries (Bates, 1987; Buss & Plomin, 1984; Goldsmith, Buss, Plomin, Rothbart, Thomas, Chess, Hind, & McCall, 1987; Goldsmith & Campos, 1982; Kohnstamm,

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Bates, & Rothbart, 1989; Plomin & Dunn, 1986; Strelau & Angleitner, 1991). In Japan, however, the number of temperament studies is still relatively small and the instruments employed have been limited. Recently, we administered two temperament questionnaires (Toddler Behavioral Assessment Questionnaire (TBAQ) (Goldsmith, 1996) and Children's Behavior Questionnaire (CBQ) (Ahadi & Rothbart, 1994; Rothbart, Ahadi, & Hershey, 1994)) to Japanese mothers, and provided evidence for the usefulness of these questionnaires in assessing temperament of Japanese children (Kusanagi, 1993a; Kusanagi, Hoshi, & Chen, 1997). In the present study, using these same questionnaires, we addressed three important issues concerning temperament and its development.

Our first objective was to identify the structure of temperament in a sample of Japanese preschool children by factor analyzing the results of CBQ scales and to compare our results with those previously reported for American and Chinese samples (Ahadi, Rothbart, & Ye, 1993). As noted by Ahadi and her colleagues, when we hypothesize an invariant underlying structure across cultures, important differences in expression of temperament can still be expected, because the individual's experiences in the socialization would influence the manifestation of temperamental characteristics. From the viewpoint of cultural adaptationism, the socialization context of children can be viewed as an ecosystem in which the physical environment, mode of production, social organization, and belief systems are functionally interdependent and coexisting in an adaptive equilibrium (Segall, Dasen, Berry, & Poortinga, 1990; J. W. M. Whiting, 1961). If the goal of child training is to produce personality trait most adaptive to the given society's economic needs and demands (B. B. Whiting & Whiting, 1975), the structure of temperament in a Japanese sample is similar to that of the American sample due to similarity in the mode of production, social organization, and probably belief system. On the other hand, it is also expected that there are similarities in temperament structure between Japanese and Chinese children due to similarities in race. Comparing our result with those obtained from these countries should lead to further understanding of the cross cultural differences that might arise from the differences both in the race and in the socialization context of the child, as well as universality of temperament structure.

To date, investigations about temperament of Japanese children have used the questionnaires assessing nine temperament scales identified by Thomas and Chess (Sugawara, Shima, Toda, Sato, & Kitamura, 1994; Windle, Iwawaki, & Lerner, 1988). According to our laboratory research and that of others, these scales are insufficient in capturing children's temperamental characteristics (Kochanska, Coy, Tjebkes, & Husarek, 1998; Kusanagi, 1993b; Hoshi, Kusanagi, & Chen, 1997). The CBQ was developed to assess three theoretical components (arousal, affect, and self regulation) thought to underlie temperament. Affective component in the CBQ is divided into positive and negative emotionality, which is further divided into more specific emotion systems (fear, anger, sadness, and discomfort). Thus, we think this questionnaire is more powerful for investigating the temperamental structure than that of Thomas & Chess's which does not measure individual differences in these different emotion systems.

The Second objective was to address the sex difference issue. In spite of its utmost psychological and sociological importance, it has not been a well studied topic in the temperament literature (Kohnstamm, 1989). A key question concerns the onset and

change over age of sex differences in temperamental phenotype. In Rothbart's longitudinal study at 3, 6, 9 months of age, neither parental report (Infant Behavior Questionnaire), home observations, nor composite measure yielded significant sex differences or sex × age interactions (Rothbart, 1986). Kohnstamm (1989) has reviewed studies on sex difference in activity level and emotionality. His conclusion with regard to motor activity level is that boys on the average show somewhat higher levels than girls and that this difference increases with age until early school years. With regard to emotionality, he stated that the concept of emotionality is far too comprehensive and that the question about sex differences in emotionality cannot be answered without first specifying the kind of emotionality. As the TBAQ and CBQ measure individual differences not in the broad emotionality but in the specific emotions, we could elucidate the sex differences in the expression of specific emotion system. In the present study, we examined the sex differences in temperament at 18 months using TBAQ, and sex differences in the children from 3 to 6 year of age using CBQ.

The third objective of the present study was to investigate developmental change of temperament expression. Research in psychology in general tends to fall into one of two realms, namely, individual differences or group differences. According to McCall (1986), when applied to behavioral development, these two realms translate into a concern with individual differences versus developmental functions. A developmental function (Wohlwill, 1973) is the average behavior for a group or individual over time. Until now, most of temperament researches have been limited to studying individual differences and have focused on demonstrating the consistency of relative rank ordering of individuals from one age to another (Guerin & Gottfried, 1994; Gunnar, Porter, Wolf, Rigatuso, & Larson, 1995; McDevitt, 1986; Pedlow, Sanson, Prior, & Oberklaid, 1993; Plomin, Kagan, Emde, Reznick, Braungart, Robinson, Campos, Zahn Waxler, Corley, Fulker, & DeFries, 1993; Rothbart, 1986; Thomas & Chess, 1986; Worobey & Blajda, 1989). The issue of developmental change common to all children has been neglected. McCall (1986) has urged researchers of temperament not to limit themselves to studying individual differences but to study developmental functions as well. In the present study, we examined the developmental change of temperament scales of the CBQ for 3 to 6 year-old children cross-sectionally. We expected a decrease in negative emotions and an increase in the scales relating to self-regulation.

Method

Subjects

Mothers who visited three health centers in Sapporo City for their children's physical check up at 18 months were asked to complete the TBAQ. Questionnaires were sent to mothers by mail from two of the health centers before the children's physical check up, and were collected when they visited the health centers. At the third health center, questionnaires were handed to mothers on visiting days, and were returned by mail. Return rates were 65.9% and 70.1% for the former, and 22.5% for the latter. A total of 483 mothers filled out the TBAQ. Among their children, 258 were boys, 222 were girls, and 3 children were not known in terms of sex. Children's ages range from 16 to 20 months, and 80% of them were 18 months old. There were three children whose ages were not known.

In order to gather data for the CBQ, mothers whose children go to one of the three kindergartens (numbers of children were 104, 161, and 170, respectively) in a town of 50,000 persons near Sapporo City were asked to complete the CBQ. The questionnaires were taken to mothers by their children through each class teacher and were returned after a week. A total of 372 mothers filled out the CBQ, and the return rates were 91.3%, 87.6%, and 80.0%, respectively. Among the children, 206 were boys and 166 were girls. There were 16 3 year olds, 108 4 year olds, 164 5 year olds, and 84 6 year olds.

Temperament Questionnaire

The TBAQ. Temperament scales were constructed with emphases on theoretical base, conceptual independence, inclusiveness of varied facets of each temperament construct, internal consistency, and empirical distinctiveness (Goldsmith, 1996). The TBAQ is comprised of 111 items that combine situations and responses theoretically postulated to be relevant to the target scales. The TBAQ assesses temperamental scales of Activity Level, Tendency to Express Pleasure, Social Fearfulness, Anger Proneness, and Interest/Persistence. All items were directly translated into Japanese, except for one item in which the name of a TV program ("Sesame Street") was deleted in the Japanese translation. Mothers were asked to indicate how often they observed their children demonstrating the behavior described during the previous month by circling one of the numbers. Numbers ranged from 1 (=never), through 4 (=about half the time), to 7 (=always), with X (=does not apply) meaning "I did not see my child in this situation".

The CBQ. The CBQ is comprised of 195 items that describe children's reactions to a number of situations (Ahadi & Rothbart, 1994; Rothbart, Ahadi, & Hershey, 1994). The CBQ assesses 15 temperamental scales: Activity Level, Anger/Frustration, Approach/Anticipation, Falling Reactivity & Soothability, Smiling & Laughter, Attentional Focusing, Discomfort, High Intensity Pleasure, Impulsivity, Inhibitory Control, Low Intensity Pleasure, Perceptual Sensitivity, Fear, Sadness and Shyness. Most of these scales were derived from the Infant Behavior Questionnaire (IBQ) (Rothbart, 1981), TBAQ and Physiological Reactions Questionnaire (PRQ) (Derryberry & Rothbart, 1988). Each scale consists of 12 14 items except the Attentional Focusing scale. Since Rothbart divided the original Attentional Focusing scale into two new scales (Attentional Focusing and Attentional Shifting), the number of items in the Attentional Focusing scale in this study was fewer than the original one. All items were directly translated into Japanese, except a few items that referred to a TV show (Mister Rogers) and nursery rhymes, which were modified to suit Japanese practice. Mothers were asked to rate whether each item was a "true" or "untrue" description of their children's reaction within the past six months on a scale ranging from 1 (extremely untrue) to 7 (extremely true), with X meaning "does not apply". When a mother could not answer because of not having seen her child in that situation, mothers were asked to circle X (not applicable). Scale scores for the TBAQ and the CBQ were computed by averaging all numerical item responses for a given scale. When a mother omitted an item, or checked the "does not apply" response option for an item, that item was not included.

Results

Structure of the Children's Temperament

The 15 CBQ scale scores were factor analyzed. According to Ahadi and her colleagues (Ahadi, et al., 1993), we employed a principal axis factor analysis, iterated to communalities and rotated the extracted factors obliquely using PROMAX algorithm. Table 1 presents the factor pattern of CBQ scales. Loadings of .40 or greater are presented in bold. Consistent with the results by Ahadi and her colleagues, this analysis resulted in the extraction of three factors. Following these authors, we labeled the three factors as Surgency, Negative Affectivity, and Effortful Control, respectively. Surgency factor loaded Impulsivity, Activity Level, High Intensity Pleasure, and Shyness (negative). Negative Affectivity loaded Anger, Discomfort, Sadness, Approach, Fear, and Soothability (negative). Effortful Control loaded Low Intensity Pleasure, Smiling/Laughter, Inhibitory Control, Perceptual Sensitivity, and Attentional Focusing.

In Table 1 the result of American and Chinese children reported by Ahadi et al. (1993) were presented in parentheses for comparison. At first glance, most of factor patterns of the CBQ scales for Japanese children were very similar to those obtained from American and Chinese children (Ahadi et al., 1993). However, according to Ahadi et al. there were minor differences in factor loadings with regard to Approach, Smiling/Laughter, and Attentional Focusing scale between samples from China and the U.S.. In their result, Approach scale plays a strong role in the definition of the Surgency factor in the Chinese sample, but not in the American sample. In their American sample, Approach scale plays a relatively strong role in the definition of the Negative Affectivity factor. In our Japanese sample, the role of Approach was more evenly distributed between Surgency

Table 1 Factor Pattern of CBQ scales

CBQ Scale	Surgency	Negative Affectivity	Effortful Control
Impulsivity	**.93**(**.86**/ **.63**)	.01(.01/ .01)	.12(.00/ -.25)
Activity Level	**.75**(**.68**/ **.64**)	.10(.09/ .06)	.10(.12/ -.35)
High Intensity Pleasure	**.67**(**.74**/ **.68**)	.10(.16/ .20)	.03(.01/ -.09)
Shyness	**.58**(**.58**/ **.46**)	.24(.27/ .39)	.03(.21/ -.18)
Anger	.15(.28/ .30)	**.74**(**.62**/ **.59**)	.10(.03/ -.10)
Discomfort	.15(.07/ .07)	**.63**(**.65**/ **.71**)	.03(.10/ -.06)
Sadness	.12(.12/ .07)	**.61**(**.69**/ **.58**)	.18(.11/ -.14)
Approach	**.45**(**.34**/ **.69**)	**.48**(**.45**/ .26)	.30(.35/ -.25)
Fear	.21(.32/ .17)	**.45**(**.53**/ **.64**)	.13(.06/ -.01)
Soothability	.20(.02/ .05)	**.56**(**.61**/ **.40**)	.27(.09/ -.22)
Low Intensity Pleasure	.02(.16/ -.01)	.09(.09/ .19)	**.72**(**.85**/ **.61**)
Smiling/Laughter	**.46**(**.31**/ **.65**)	.02(.02/ .01)	**.65**(**.72**/ **.18**)
Inhibitory Control	**.40**(**.42**/ .22)	.21(.24/ -.14)	**.63**(**.52**/ **.73**)
Perceptual Sensitivity	.05(.07/ .33)	.11(.11/ .09)	**.58**(**.47**/ **.49**)
Attentional Focusing	.25(.32/ .05)	.05(.25/ .24)	**.47**(**.21**/ **.64**)

Note: $N = 372$. Loadings greater than or equal to .40 are presented in bold. For comparison, the loadings for American and Chinese children reported by Ahadi, et al. (1993) were included in parentheses (the American ones come first).

and Negative Affectivity factors. With regard to the role of Smiling/Laughter scale, the Japanese sample was more similar to the American than the Chinese sample. On the other hand, for the Attentional Focusing scale, Japanese children were closer to Chinese than American children. Thus, these results suggest that the Japanese sample took a middle position between American and Chinese children concerning the difference of temperamental structure among cultures.

Developmental Change and Sex Differences in Children's Temperament

Analyses of variance were performed across sex for each of the TBAQ scales. No sex differences were found for each temperament scale at 18 months.

As the number of the 3 year olds subjects for the CBQ was too small, we aggregated the three year olds and the four year olds into one group. Analyses of variance were performed across age and sex for each CBQ scale. Table 2 presents the means and standard deviations by sex and ages for each CBQ scale. Significant sex effects were found for the seven CBQ scales. Boys were rated significantly higher on measures of Activity Level ($F(1, 365) = 7.29$, $P < .01$), High Intensity Pleasure ($F(1, 365) = 8.00$, $P < .01$), and Impulsivity scale ($F(1, 365) = 5.12$, $P < .05$) than were girls. On the other hand, girls had higher scores than boys for Inhibitory Control ($F(1, 365) = 20.92$, $P < .0001$), Low Intensity Pleasure ($F(1, 365) = 7.99$, $P < .01$), Perceptual Sensitivity ($F(1, 365) = 14.11$, $P < .001$), and Shyness ($F(1, 365) = 6.07$, $P < .05$). Thus, on the whole, boys were rated higher on scales related to the Surgency factor. On the other hand, girls were rated higher on scales related to the Effortful Control factor.

There were significant age effects for the four temperament scales. Although there was no significant difference between five and six years olds, mothers of the five year olds rated their children as lower in Anger ($F(2, 365) = 2.99$, $P < .06$) and Discomfort

Table 2 *Means and Standard Deviations for CBQ from 3 to 6 year of age*

	3-4 years		5 years		6 years	
	Male	Female	Male	Female	Male	Female
Scale	(N=71) M (SD)	(N=53) M (SD)	(N=81) M (SD)	(N=82) M (SD)	(N=54) M (SD)	(N=30) M (SD)
Impulsivity	4.39(.73)	4.17(.77)	4.19(.71)	4.03(.67)	4.27(.82)	4.13(.69)
Activity Level	5.10(.70)	4.80(.72)	4.87(.66)	4.75(.69)	4.88(.79)	4.69(.65)
High Intensity Pleasure	4.66(1.01)	4.31(.75)	4.58(.86)	4.41(.89)	4.83(.93)	4.52(.66)
Shyness	3.83(1.20)	4.30(1.17)	4.04(1.07)	4.33(1.22)	4.05(1.19)	4.11(1.21)
Anger	4.05(.70)	3.90(.70)	3.78(.68)	3.75(.71)	3.90(.86)	3.73(.80)
Discomfort	4.23(.68)	4.17(.66)	4.00(.69)	4.00(.76)	4.06(.79)	4.09(.81)
Sadness	3.85(.45)	3.82(.71)	3.92(.61)	4.01(.60)	3.88(.67)	4.10(.61)
Approach	4.56(.64)	4.37(.70)	4.56(.68)	4.52(.72)	4.56(.74)	4.68(.68)
Fear	4.36(.79)	4.39(1.01)	4.21(.91)	4.35(.80)	4.25(.93)	4.35(.91)
Soothability	4.85(.87)	4.93(.70)	4.78(.72)	4.73(.67)	4.95(.73)	4.69(.76)
Low Intensity Pleasure	5.15(.53)	5.20(.49)	5.05(.56)	5.18(.58)	4.93(.60)	5.35(.52)
Smiling/Laughter	5.68(.60)	5.53(.66)	5.56(.60)	5.60(.67)	5.58(.60)	5.79(.65)
Inhibitory Control	4.28(.85)	4.70(.69)	4.70(.69)	5.01(.65)	4.65(.93)	5.04(.82)
Perceptual Sensitivity	5.08(.69)	5.41(.63)	5.22(.67)	5.41(.63)	5.20(.86)	5.56(.64)
Attentional Focusing	4.22(.81)	4.37(.69)	4.46(.79)	4.57(.89)	4.52(.84)	4.56(.68)

(F (2, 365) = 2.82, $P<.06$) than those of the three- and four-years olds. On the other hand, the Attentional Focusing scale score of the five-year-olds was higher than that of three-, and four-year-olds ($F(2, 365) = 3.48$, $P<.05$). For Inhibitory Control, there were significant differences between the three- and four-years olds and five-year-olds and between three- and four-years olds and six-year-olds. That is, Inhibitory Control scale score of three- and four-years-olds was lower than that of five- and six-year-olds.

Discussion

We factor-analyzed the 15 CBQ scales from a Japanese sample and obtained three factors (Surgency, Negative Affect, and Effortful Control), similar to those obtained in the U.S. and the China samples by Ahadi et al. (1993).

In the results by Ahadi et al., there was a large degree of similarities between the two samples from the U. S. and China for factor loading patterns of twelve scales among fifteen scales. Similarly, for Japanese children, factor loading patterns concerning these twelve scales were very similar to those derived from both American and Chinese samples. The strong similarity in factor structure among the three nations supports the view of invariance of underlying structure of temperament across cultures, a view that converges with that of other researchers (Sugawara, et al., 1994; Windle, et al., 1988). With respect to factor loadings of the other three scales, Japanese children took middle positions between American and Chinese children. What does this result imply? Given both that Japanese are akin to Chinese in race and that temperament is defined as constitutionally based individual differences, temperamental structure of Japanese children should be more similar to that of Chinese rather than American. Our result suggests that the development of the phenotype of some temperament dimensions might be influenced over time by the culturally varied children's experiences in socialization which are organized culturally and are related to the ecosystem.

Concerning the patterns of sex differences on the CBQ scales, Japanese children were very similar to those of American children, but not to those of Chinese children. Indeed, among the seven significant sex differences in the CBQ scales for Japanese children, six of them were reversed in comparison with those of Chinese children (Ahadi, et al., 1993). Boys in our sample scored higher on the Surgency scales of Activity Level, High Intensity Pleasure, and Impulsivity. In the Chinese sample, however, girls scored higher on these three scales. Moreover, although boys in our Japanese sample scored lower on Effortful Control scales of Inhibitory Control, Low Intensity Pleasure, and Perceptual Sensitivity, boys in the Chinese sample scored higher on these same scales. What are the implications of these findings? Sex differences in temperamental characteristics are viewed as functions of both culture and worldwide constitutional factors (i.e. sex differences in gene). Given that sex differences in genes are universal among the races, these findings lead us to the conclusion that the cross-cultural differences in sex differences of temperamental characteristics could arise from the differences in socialization due to sex role stereotyping. However, we need to investigate whether or not there are differences in sex role stereotyping and in socialization of boys and girls between Japan and China.

Our findings regarding sex differences were consistent with what might be consid-

ered stereotypical sex differences in Japan. This suggests that the CBQ is useful in assessing the temperament of Japanese children. However, to the extent that parental report includes subjective judgements of the parents (Bates & Bayles, 1984), these findings need to be verified by more objective measures in future study. The fact that there were sex differences in the Activity Level on the CBQ scales for three to six year olds, but no sex differences on the TBAQ scales at eighteen months was consistent with the conclusion from the overview of studies by Kohnstamm (1989). Sex differences on the Shyness scale were found on the CBQ scales, but not on the corresponding TBAQ scales (Social Fear) at eighteen months. These results and the other sex differences on the CBQ demand us to examine when and how these sex differences appear in future longitudinal temperament research.

The results concerning the developmental change of temperament measures fit with our expectations. As expected, Anger and Discomfort scale scores decreased, and Attentional Focusing and Inhibitory Control scale scores increased with age. We suppose that developmental changes in these negative emotions are due to the increase of capabilities in focused attention and inhibitory control. Ahadi & Rothbart (1994) also suggested that Effortful Control may be implicated in the regulation of anger tendencies. Indeed, Kochanska and her colleagues (Kochanska, et al., 1998) recently demonstrated that children who were capable of longer and more intense focused attention responded to aversive stimuli with fewer discomfort behavior and had lower intensity of angry distress. Furthermore, in their result, children who are capable of a more inhibited approach to grasping objects were slower to respond to discomfort and tended to have lower intensity and longer latency to anger. Thus, her results in the laboratory setting endorse our assertion with regard to the causal relationships between these negative emotions, and attentional focusing and inhibitory control. However, we should keep Kochanska's words of caution in mind that the direction of causality is somewhat ambiguous. That is, attention may serve to modulate reactivity to aversive stimuli, or the proneness to negative emotion may interfere with focused effortful attention.

As described by Kochanska and her colleagues (1998), given the salience of the topic of emotion regulation, our findings concerning the developmental change in negative emotionality and effortful control may prove important. Moreover, given the recent fact that there is an increase in the number of elementary school children in Japan who exhibit "Kireru" behaviors, it is very important to reveal how a child becomes able to inhibit anger behavior. The term "Kireru" means to be incapable of inhibiting one's anger and to express anger in an explosive manner. To clarify this issue, we need to observe more closely in future studies what kinds of self regulative behaviors a child actually uses to suppress the anger behaviors. Furthermore, it is also necessary to reveal how a child acquires these self regulative behaviors in the actual developmental course. There is a succession of phases in transition from dyadic regulation toward self regulation of emotion in the preschool years (Sroufe, 1996). Sroufe noted that learning to inhibit anger behaviors under the guidance of the caregiver paves the way for later self regulation. We believe that clarifying this developmental transition in negative emotion regulation should lead to an understanding of the process in which self regulative behaviors were acquired.

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EMOTION COMMUNICATION OF JAPANESE MOTHERS AND THEIR INFANTS

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Abstract

As part of an observation in a longitudinal project, 42 pairs of mothers and their 10 months infants were observed in a separation episode. Mother's 1) actions 2) utterances 3) degree of affect attunement to the infant, and the infant's 1) degree of distress during a 30 second separation, and 2) upon reunion were coded and analyzed. The main results were: 1) Fifty percent of the infants showed intense distress during separation; among them 33.3% remained in intense to medium distress after reunion, while 66.7% of them showed no distress at all, 2) Four categories of utterances by the mothers upon reunion were observed in response to infant distress: labeling infant feeling, apologizing and excusing, assuring and/or soothing, and distracting by asking questions, 3) Sixty eight point eight percent of the mothers of infants observed with some degree of distress showed affect attunement, 4) Twelve mothers (28.6%) made apologies and/or excuses to their infants who showed some degrees of distress, 5) Eight of the nine mothers (88.8%) who made apologies and/or excuse showed medium to high degrees of affect attunement during reunion. Mothers' response by apologies and/or excuses was contrasted with strategies used by Western mothers.

Key Words: Emotion regulation, affect attunement, Japanese infants, separation episode, *amae*

INTRODUCTION

The concept of emotion regulation is becoming increasingly important in recent research in emotion development. It is also becoming an indispensable concept in temperament literature (e.g. Rothbart et al., 1992). Different researchers have slightly different conceptualizations. One author for example, has defined it as '...the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features to accomplish one's goals.' (Thompson, 1994: 27-28).

One of the issues in the research of emotion regulation concerns with individual differences. The individual differences in emotion regulation during early infancy were reported to predict later sociability (e.g. Eisenberg et al., 1997). Calkins has suggested

two sources of these individual differences in children's emotion regulation ability. The internal source refers to the neuro regulatory systems, behavioral traits, cognitive components, etc., of the child. The external source refers to interactive caregiving styles of the child's caregiver, including responsivity, reciprocity, support, neglect, etc. of the caregiver. The latter also includes explicit training in the child's socialization, such as modeling, reinforcement and discipline. A whole range of individual differences in emotion regulation are considered to arise from the interaction of these external and internal sources.

However, during early infancy, the characteristics of the caregiver are considered an important aspect of the external sources of individual differences in emotion regulation in the child. The development of infant's emotion regulation can be characterized as revealing three trends (Walden & Smith, 1997, pp. 18-21). The first is a developmental trend from a predominance of strategies requiring caregiver participation to less reliance on the caregiver and a more enlarged repertoire of intraindividual strategies. The second trend concerns mostly with the addition of mentalistic strategies to the repertoire of concrete, behavioral strategies characteristic of the earlier period. The third trend is the occurrence of an increase in capability in emotion regulation and changes in characteristics in the speed and intensity during infancy. During the first few years, the mode of regulation shifts from the mode of dyadic regulation to the mode of self regulation (Sroufe, 1996, p. 192).

According to Gianino and Tronick (1988), there are two classes of regulation behaviors, namely, the self directed behaviors and the other oriented behaviors. The former refers to gaze aversion, or self soothing behaviors such as thumb sucking. The latter refers to the reading of messages in infant's expressions, and behaviors serving to facilitate the goal-directed behaviors of the infant, including both the infant's own spontaneous behaviors as well as the infant's behaviors resulting from caregiver's supportive and reciprocated behaviors.

Because of the relatively primitive stage of the very young infant's regulatory function, mother-infant interaction is dominated by the mother's modulating behaviors. When the infant's own capacity becomes more developed, the role played by the caregiver decreases, enabling the infant to shift to an intraindividual strategy. The regulatory strategy of the caregiver is a direct frame, or scaffolding, for the infant's emotion regulation and, later when internalized by the infant, becomes the infant's own emotion regulation strategy (Lyons-Ruth & Zeanah, Jr., 1993; Walden & Smith, 1997).

From a communication, interactional point of view, it is clear how important a role the caregiver's regulation strategy plays in the current and later development of an infant's emotion regulation capability. However, the dominant approach in understanding the caregiver's characteristics in this respect has emphasized the concept of maternal sensitivity. According to this view, a sensitive caregiver is one who reads correctly an infant's emotion expressions, and responds appropriately. Although the emotion expressions of the newborn infant can be considered as arising mainly from biological, physiological sources that are universal, the caregiver's response, or her strategy, is inevitably shaped by, and based on, cultural practices of the caregiver's specific culture. In other words, through interacting with the caregiver from the very first days, the young infant's emotion

expressions are guided by, and then assumes the form of, the culture where the emotion communication takes place.

One of the reasons for this topic of emotion regulation to attract great attention from researchers is the recognition of the importance of social context in regulation (Thompson, 1994, p. 26). From a cross cultural point of view, the emotion communication between the caregiver and the infant should be examined by taking the cultural perspective into consideration. However, current views concerning caregiver behavior have been limited and mainly advocated by Western researchers. It has been pointed out that dyadic relations between infant and the mother in Japan display some characteristics very different from that in Western societies, such as the U. S. (Ujiie, 1998; Chen & Miyake, 1986; Miyake et al., 1986). However, very few reports on cultural characteristics of the Japanese caregiver's emotion regulation can be found. The main objectives of this paper are to provide a description of the Japanese caregivers' behaviors as they engage in emotion regulation with their young children, and to examine the characteristics of their regulatory strategy.

As mentioned above, the characteristics of the characteristics caregiver that influence children's emotion regulation can be divided into two classes; the interactional characteristics and explicit training. In this paper, we focus on the degree to which the caregiver regulates the infant's emotion, direct soothing behavior and behavioral characteristics of the caregiver during mother child interaction.

METHOD

Subject

Forty two infant mother pairs (21 boys and 21 girls) participated in a longitudinal project on emotion development and are the subjects of this report. The average age of the infants was 10.0 months (ranging from 9 months to 11 months), and that of the mothers was 28.9 years (ranging from 22 to 44 years). Three infants were born with Caesarean section, one was born with the birthweight of 2500g and had asphyxia, one was delivered by Caesarean section and was hospitalized for 14 days. All the other 37 infants were normally developing and without any particular abnormality recorded at birth.

Procedure

The mother infant pair was led into an observation room which was arranged and decorated as an ordinary sitting room at home. Each pair was asked to play with the toys prepared by the experimenter to warm up for subsequent observations. After a series of episodes designed to elicit infant emotional expressions such as fear (Gozira, Stranger Approach), anger (withdrawal, and hiding of favored toy), surprise (Jack in the box), and pleasure (peek a boo) were observed, a short separation episode was introduced when the mother stopped play, said good bye to her child and left the infant alone in the room. The mother was completely out of the infant's sight for 30 seconds, and then returned to the infant. This separation session was video recorded.

Coding

Two coders well trained in infant observation methodology carried out the analyses

of the video recordings. The items that were coded are as follows:

Infant behaviors:

1) intensity of distress during separation and reunion (high, medium, and none).

Mother behaviors:

1) Detailed descriptions of mother's actions and vocalizations in the reunion,
2) The degree of mother's affect attunement (high, medium, and none), following Stern's conceptualization (Stern, 1984, pp. 3-12).

RESULTS

Intensity of Infant's Distress

Twenty one infants (50%) showed high intensity of distress dur separation. During reunion, two of these 21 infants (9.5%) showed high intensity of distress, five (23.8%) showed medium distress and fourteen (66.7%) showed no distress. Seven infants (16.7%) showed medium degree of distress during reunion, and one of them showed increased degree of distress after reunion. Fourteen infants (33.3%) did not show distress during separation, but one of them showed medium degree of distress after reunion.

Maternal Verbal Expression

Four categories of maternal verbal expressions were observed:

1) Labeling infant's current feeling or emotion expression. Saying things such as,
   'Sabisi katta no' (Were you lonely?),
   'Kowakattano' (Was it frighten?),
   'Okottano' (Were you angry with me?),
   'Bikkurisitano' (Were you surprised/Frightened?),
   'Kanasikattano' (Were you sad?),
   'Iyadattano' (Did you not like it?), or
   'Naitetano' (Were you cry?).
2) Apologizing, and/or excusing oneself. Saying things like,
   'Gomenne' (Sorry),
   'Warukattane' (It's my fault),
   'Toire ni ittetano' (I had gone to the bathroom).
3) Soothing the infant by assuring him/her, saying
   'Daijobu' (It's all right),
   'Nakanaiyo' (Don't cry),
   'Yoshiyoshi' (It's all right),
4) Distracting by asking question, saying
   'Doshitano' (What's the matter?)

Mother's Affective Attunement

Seven mothers (16.7%) were observed to show high degrees of affective attunement to their child's emotion expressions upon reunion. These accounted for 33.3% of mothers whose infants (21 of them, 10 boy's and 11 girls) showed high degree of distress during separation. Twelve mothers (28.6%) showed medium degree of affective attunement. Of the mothers whose infants showed some degrees of distress during separation, 67.8%

showed some degree of affective attunement.

Mother's Apologizing

Previous studies have pointed out strategies used by mothers in the face of their infants' distress or negative emotion expressions; however, little attention has been paid to the mother's behavior of apologizing under the circumstance. This is not a uniquely Japanese behavior style; indeed, it is widely seen in many Majority World (Kagitcibasi, 1996, p. 3). However, as it represents a strategy different from that typically found in Western societies, what we describe here should be of comparative interest.

Nine mothers were observed to vocalize 'apologies' and three to vocalize 'excuses' upon returning to their crying or fussing infants. No such vocalization was observed when the infants did not cry and/or fuss during separation. Furthermore, mothers who apologized and/or excused themselves showed more affect attunement (Fisher exact test, $p = .002$; see Table 1). Of the 23 mothers who did not show affect attunement, only one did apologize or excuse upon reunion, whereas 47.3% of the affect attuning mothers made apologies and/or excuses upon reunion. Eight of the nine mothers (88.8%) who made apologies and/or excuse showed medium to high degrees of affect attunement during reunion.

However, maternal affect attunement, apologies and/or excuses did not appear to be related with the infants' degree of distress dur separation. That is to say, that there was no significant relationship between infants' effectiveness of emotion regulation and mothers' affect attunement.

Table 1 Maternal Affect Attunement and Apologies/Excuses
(number of person)

		Apologies and/or Excuses		
		YES	NO	Total
Affect Attunement	YES	10	9	19
	NO	2	21	23
Total		12	30	42

Mother's Behavior

No particularly unexpected behaviors of the mothers were observed apart from pick-up their infants, show toys to their infants.

DISCUSSION

The results of this study can be summarized as follows:

1. Mother behaviors can be categorized into 4 groups, namely, "labeling child's feeling", "apologizing and/or excusing", "soothing", and "distracting by asking question".

2. Among mother behaviors, the one used most often in Japan is mother's label infants' feeling, followed by mothers' apologies and/or excuses to child. This is related to mother's affect attunement, and the child's condition before engaging in emotion regulation with the mother. However, mother's affect attunement does not necessarily lead to

cessation of infant's distress. In other words, the presence of attunement itself does not guarantee immediate effectiveness in subsequent emotion regulation of the infant.

First of all, let us consider mothers' behaviors and utterances other than 'apologies and/or excuses'. Labeling infant's feelings, and asking the reason for those feelings can be considered typical examples of explicit training mentioned above. In discussing the importance of meta emotion (referring to parents' emotions about their own and their children's emotions, and meta emotion philosophy) for the children's long term psychological adjustment, Gottman, et al. (1996) argued for the necessity for parents' to have an emotion coaching meta emotion philosophy which enables parents to be aware of their own and their children's emotion, as well as to coach their children especially when they are experiencing negative emotions such as anger and sadness. Accord to Gottman, et al. an emotion coaching philosophy has five components: parents (a) said that they were aware of low intensity emotions in themselves and in their children; (b) viewed the child's negative emotion as an opportunity for intimacy or teaching; (c) validated their child's emotion; (d) assisted the child in verbally labeling the child's emotions; and (e) problem solved with the child, setting behavioral limits, and discussing goals and strategies for dealing with the situation that led to the negative emotion (Gottman, et al., 1996, p. 244). In addition, emotion coaching is believed to facilitate development of the child's basic ability in soothing one's self physiologically and in focusing attention implying positive effects on the child's parasympathetic regulation (Gottman et al., 1996, p. 247). We want to point out that although this emphasis on viewing emotion cognitively and objectively is more characteristic of a Western approach to emotion, the fact that many Japanese mothers also label their children's feelings, and that they sometimes ask their crying preverbal infants, 'What happened to you?' as though they assumed the young children to be able to recognize their own emotion states, suggests feeling labeling and facilitating awareness of one's own emotion are strategies that are universal. Furthermore, it is interesting to note that, instead of a more direct soothing strategy (saying 'Don't cry'), many Japanese mothers adopt a less direct strategy of labeling their children's feeling when the children are in distress.

However, the mothers labeled their children's feeling in a wide variety of ways, not only for such negative emotions as *sadness, fear, anger and distress*, but for *surprise* as well. The maternal individual differences in feeling labeling seem to reflect mothers' cognition and interpretation of their children's emotion states. These differences would probably have some influence on the development of the dyadic relation and on emotion development of their children. In this study, individual differences were found in the kinds of emotions expressed by the children in response to separation. Future research will be needed to further investigate the connections of these differences.

Since maternal expressions of apologies and/or excuses upon reunion have not been reported previously, it is assumed that they are phenomena not often observed in Western societies. However, these are responses readily observable and understood in Japan. This and other observations have led the second author to assume the existence of an adult attitude in Japan toward children, especially children in distress, expressed as 'loneliness prone' (Chen, 1996, pp. 121-123). In this study, only mothers whose children showed distress during separation were observed to make apologies and/or excuses for

oneself, in spite of the fact that all mothers left their children alone and made them feel anxious. It follows that it is not this behavior of leaving the child that led to their apologies and/or excuses, but the fact that their children were in distress due to their absence.

In addition, the above results showed that the mothers' apologies and/or excuses were related to maternal affect attunement. Mothers who apologized to their children upon reunion, were observed to repeat their apologies with utterances such as "Hai, hai, gomen nei, gomen nei, oh, oh" (Yes, yes. Oh, I'm so sorry, so sorry. Well, well), with a tone of voice encouraging crying or fussing infants to continue their current expressions and to welcome and endorse their dependent attitude for the time being; it appears almost as though mothers took efforts in maintaining the infants' current expressions so that they could join their infants' misery. This style of the mothers' emotion expression reminds one of the affect state of 'amae' in which one behaves emotionally, relying on the assumed unlimitedness of another's love. Amae is defined as an emotion state that arises when union with the other is totally accepted (Doi, 1991). The mothers' apologies seem to suggest that through uttering their apologies in such a tone of voice, the mothers were seeking understanding and forgiveness and appealed for a return to the previous undisturbed state before the separation.

Both affect attunement and 'amae' arise almost unconsciously (Stern, 1985; Doi, 1991), and are very different from the tendency to objectify and to interpret one's and the children's emotions, a tendency is said to be characteristic of emotion communication in many Western societies. The emotion regulation strategies of Japanese mothers seem to include elements that are quite different from that found in Western research. It is difficult to think that these strategies would have no effect on the emotion regulation of their children. Emde (1992) suggests that emotional experiences including that of 'amae' are stored as a part of procedural knowledge and will exert their influence later without becoming conscious. The mothers' emotion regulation strategies described in this paper, and the infants' emotion experiences shaped and regulated by these strategies will also influence children's emotion development in the future.

Finally, in this study, no significant relation between mothers' affect attunement strategy and its effectiveness on the actual emotion regulation of the infants were found. Future research is needed to take into consideration the characteristics of the children's emotions and the dyadic attachment relationship.

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A CROSS-CULTURAL STUDY OF FACIAL EXPRESSIONS OF EMOTION USING MULTIDIMENSIONAL SCALING

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Abstract

This paper searches for evidence of display rules, using multidimensional scaling (MDS). Groups of New Zealand and Japanese informants applied variations of the "method of scaling" to a particular set of 30 photographs of facial expressions. We constructed a map of "expression space": a two dimensional spatial model in which each photograph is represented by a single point and where the distances between points correspond to the dissimilarities which the subjects perceived between expressions (as indicated by their sorting data). The map is a reasonable reflection of how people's perceptions of facial expressions are structured. As well as accounting for these sorting data, the map predicts how subjects respond to quite different questions. Combined with verbal descriptions of the expressions, it lends itself to interpretation in terms of polar coordinates, and also in terms of an x, y system of coordinates.

Key Words: display rule, facial expressions, cross cultural study, multidimensional scaling

MAPPING DECODING RULES

There is evidence from a number of European and non European cultures that people classify facial expressions into a similar set of emotional categories. The way that people perceive and recognise expressions follows a similar pattern, whatever their culture (Ekman, 1994). But it has been suggested that this underlying pattern can be modulated to a certain extent by culture specific "display rules" and "decoding rules" (Ekman, 1972).

As an example of a display rule, when Japanese and American subjects were observed in the presence of an authority figure, the former showed a tendency to underplay their initial (negative) expressions (Ekman & Friesen, 1976). As an example of a decoding rule, Matsumoto and Ekman (1989) found that cultural background affected the level of intensity that informants read into expressions, depending on the emotion category

describing each expression. In their study, Japanese and American respondents rated the expression intensity of 48 photographs.

In the present study we adopted the Method of Sorting which is non-verbal: subjects are not asked to describe the photographs using a restricted set of emotion labels (the Forced choice paradigm), or even without restrictions. This removes a potentially confounding source of cross-cultural differences, since the emotion labels in two languages are not necessarily exact equivalents of each other: "translations" can differ, either in fine nuances of meaning, or in the level of intensity they imply. From our Multidimensional Scaling (MDS) analyses maps are constructed; similarly perceived expressions are placed closer together.

Maps can be constructed for the New Zealand and Japanese informants separately. If the decoding rules differ between the two cultures, this should show up as systematic differences between the maps.

METHOD

Stimuli

The I FEEL series of photographs are part of a projective test (Infant Facial Expressions of Emotion from Looking at Pictures). The version that is currently available, the I-30 series, consists of 30 polychromatic photographs (11 by 8.5 cm) of infants and young children, showing a variety of spontaneous, unposed expressions. When used as the test's designers intended, a subject describes the emotions displayed in each face; these descriptions are tabulated, and compared against base line descriptions to assess whether the subject is projecting undue amounts of happiness, sadness, anger, etc. onto the faces and utilised for clinical intervention.

Subjects and procedure

Twenty two adult New Zealand participants (10 male, 12 female) sorted the 30 photographs into piles or groups, on the basis of similarity of expression, so as to place items which "looked similar" into a group together. This is "unconstrained" or "free" sorting (F sorting for short); it leaves the subject free to decide on the criteria for assessing similarity, the number of items in each group, and the number of groups. F sorting has been applied to facial expressions in a number of earlier studies (Emde, Kligman, Reich & Wade, 1978; Hulin & Katz, 1935; Nummenmaa, 1990; Russell & Bullock, 1986a, 1986b; Russell, Lewicka & Niit, 1989; Stringer, 1967).

Twenty New Zealand subjects also provided "successive" or "hierarchical"sorting data (H sorting, for short). H sorting provides substantially more information. This time the subject's task is to arrange the cards, step by step, into progressively larger groups: selecting the two most similar groups at each step and merging them into a single group, repeating this procedure until one group is left. To start with, the items are all separate, so the subject's first step is to select the two most similar photographs and combine them into a group of two. Data are recorded at every step in this procedure. Since in pilot testing it turned out that 30 items were too many to be conveniently H-sorted the cards were shuffled and split into two subsets of 15, which subjects H-sorted separately. This random splitting was repeated so that the two subsets were different for each

subject.

Twenty six non English speaking Japanese subjects sorted the I FEEL photographs for this study. Japanese subjects were all female : mothers of children at a kindergarten in Sapporo. They followed Additive sorting (A sorting), a procedure which combines features of F and H sorting. As a first step, each subject arranges the items into piles. In each subsequent step, the subject merges the two most similar groups, thereby arranging the items into larger and larger groups.

Analyses

Sorting data are not suitable for analysis with the standard form of MDS, since the subjects do not directly indicate the inter item proximities which they perceive. A common approach is to convert their responses into indirect estimates of the proximities ("co occurences"). However, this approach suffers from a tendency to produce distortions and artefacts (Bimler & Kirkland, 1997).

By making certain assumptions, it is possible to calculate the probability that a subject sorts the items in a specified way, given a table of the proximities perceived between them. The "Method of reconstructed dyads" produces a spatial model (two dimensional in this case, i.e. a map) which maximises this probability, for the sorting sequences which the subjects actually provided (Bimler & Kirkland, 1996).

Results

The sorting data from New Zealand and Japanese respondents were combined, and analysed using the method of reconstructed dyads. Figure 1 is the result. The points are numbered from 100 to 130, these being the labels assigned to the I 30 series of I FEEL items.

To make sense of the 30 scattered points of Figure 1, we can incorporate information about the emotional labels used to describe each face. To do so we used a table of base line descriptions which is circulated as part of the I FEEL Test documentation. That table summarises the words used by 145 American subjects to describe each face.

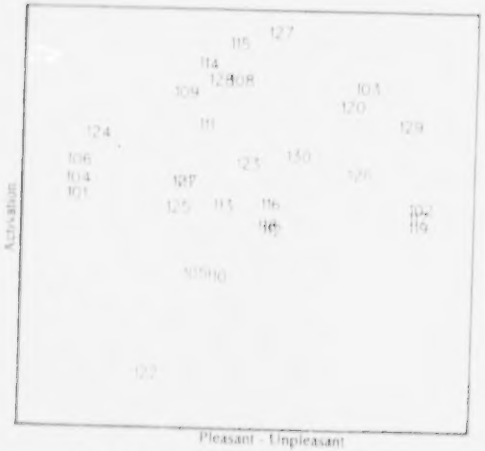

Figure 1 Map of 30 I FEEL expressions derived from combined sorting data from New Zealand and Japanese informants.

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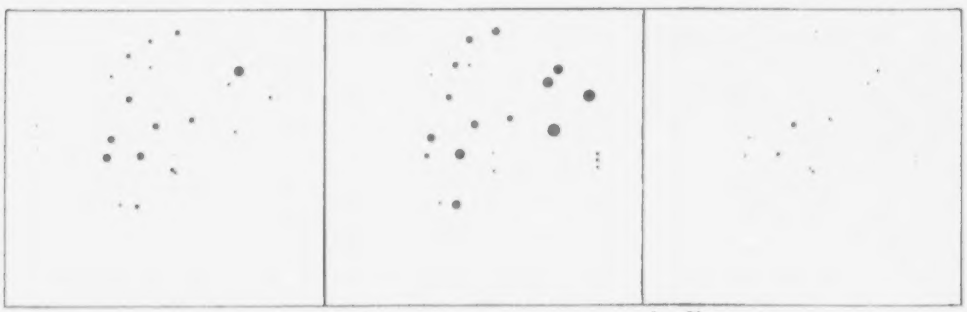
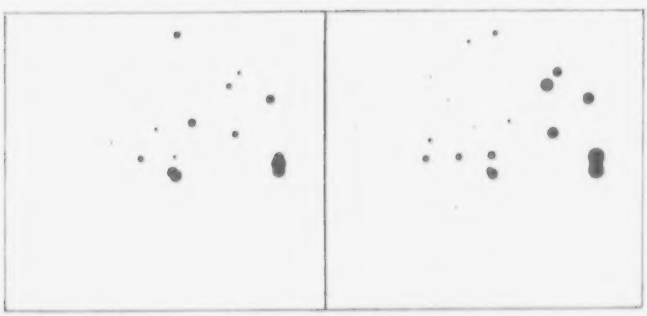
a. surprise b. interest c. joy

d. content e. passive f. sad



g. shy h. fear i. disgust



j. anger k. distress

Figures 2a-k Emotion-attribution data used to interpret Figure 1. Items are indicated by circles; the area of each circle is proportional to the percentage of people who described that face as: a surprise; b interest; c joy; d content; e passive; f sad; g shy; h fear; i disgust; j anger; k distress. (crosses correspond to zero percentages)

Their responses were sorted into 13 broad emotion categories (Surprise, Interest, Joy, Content, Passive, Sad, Shy, Shame, Disgust, Anger, Distresss, Fear, Other). For each photograph, the categories are listed as a percentage of the total responses, across a column of the table.

"Shame" occurs very seldomly (peaking at 2.1% of responses for Item 121). Ignoring that column, and the "Other" column, provided us the 11 panels of Figure 2. In each panel, the area of each dot is proportional to the percentages of subjects whose descriptions of the corresponding expression fell into that category.

To highlight differences and similarities between Japanese and New Zealand sorters we analysed their results separately and these are presented as the maps of Figures 3a and 3b.

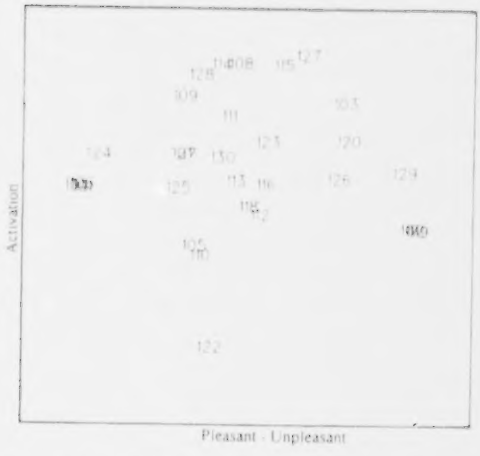


Figure 3(a) Map of 30 expressions derived from data from New Zealand informants in isolation.

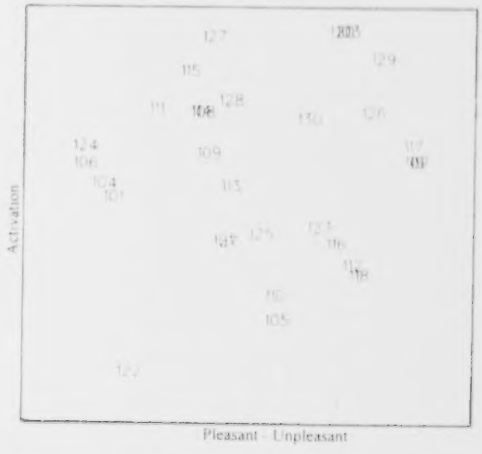


Figure 3(b) Map derived from Japanese informants in isolation.

DISCUSSION

General

One way to interpret Figure 1 is as a circle, divided by the emotion categories into overlapping sectors. The centre of the circle, where the sectors converge, is located roughly between points 105, 110, 112, 118, forming the origin of a system of polar coordinates. The radial coordinate represents intensity; the angular coordinate corresponds to the emotion. The sequence of emotions around the circle is not arbitrary, but is determined by the pattern of similarities. As Woodworth and Schlosberg pointed out (1954), the same sequence also accounts for the pattern of misidentifications (to misidentify emotions, they must be sufficiently similar). For example, Matsumoto & Ekman note that expressions intended to convey "fear" were often called "surprise", a phenomenon noted also by Russell, Suzuki & Ishida, 1993.

Figure 1 can also be interpreted in terms of a pair of orthogonal dimensions. The horizontal axis can be identified as a "pleasure displeasure" or "affective tone" dimension, since it runs from a cluster of smiling faces (101, 104, 106, 124), generally labelled "joy", across to the clearly unhappy faces 102, 117, 119. The vertical axis runs from 122

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(a sleeping child, generally labelled "content") up to a cluster of startled expressions epitomised by 115, 127, and can plausibly be identified as an "activation" or "arousal" dimension. The same two dimensions emerged in a study of emotion words, applying MDS and factor analysis (Russell and Ridgeway, 1983). These are the dimensions used in the I FEEL projective test, to quantify subjects' responses (the "Ridgeway technique").

The dots in the panels of Figure 2 are definitely not distributed randomly. Expressions rated highly on each of the emotion categories are grouped together, forming zones or sectors. However, there are no sharp boundaries; the categories overlap, and fade into one another, in the way of "fuzzy concepts" (Russell & Bullock, 1996b). For example "Surprise" shades continuously into "Fear", so that there are photographs for which either description is apt. Some adjacent categories overlap more than others — "anger" and "distress" are practically synonymous.

Cross cultural comments

Matsumoto and Ekman (1989) found cultural variations in the intensity levels ascribed to different expressions of emotion. Japanese judges, rating 48 photographs on a 0–8 scale, rated "disgust" photographs as most intense; American judges rated "happiness" and "anger" as most intense.

Such variations can be investigated without making intensity judgments. We draw an analogy with colour vision. Like expressions, colours can be represented on a polar plot — the familiar colour wheel. One way to investigate colour vision deficiencies (CVD) is to ask the subjects to assess the intensity of various primary colours, where any decrease in the intensity of red or green indicates a case of protanomaly or deteranomaly. An alternative non-verbal approach is to investigate the overall structure of colour similarities; a CVD flattens the colour circle into an ellipse and brings red and green closer to the neutral hues at the centre. Similarly, if variations in the decoding rules reduce the intensity of a given expression, for judges from a particular culture, we expect this to show up as a distorted polar coordinate plot. Examples of that expression should be seen as more similar to central (neutral) expressions, bringing them closer to the centre. More salient expressions belong further out.

Russell, Lewicka and Niit (1989) collected cross-cultural sorting data and found no significant differences in the MDS solutions. But in that study, there were no opportunities for people to indicate whether items were closer to or further away from the centre, there being no "neutral" items to link them with — only adjacent items, around the outer edge of a polar plot (the expressions were picked to epitomise the emotions as clearly as possible, i.e. expressions of maximal intensity).

With the I FEEL series, there are neutral items as well. This makes the sorting data more sensitive to differences in the saliences of the various emotional sectors. Figures 3(a), 3(b) result from separate analyses of the New Zealand and Japanese data, respectively. Clearly they are topologically the same; the general pattern of similarities and the sequence of emotions around the circle are not affected by cultural background. The location of item 122 (the face of a sleeping child) is poorly defined by sorting data; many people sort it into a group by itself, giving no indication how it related to other items.

Its varying positions in Figures 3(a) and 3(b) can be discounted. Figures 3a and 3b also differ in the exact placement of two extreme clusters, (101, 104, 106, 124) and (102, 117, 119), but again, these are relatively distinct expressions, which weakens the constraints that sorting data places on their locations.

Otherwise, these two Figures are remarkably similar. We conclude that cultural differences, if they exist at all with these stimuli, are smaller than the differences between age groups, sorting emotion words (Russell & Ridgeway, 1983). The variations in that study took the form of overall compressions and elongations of the solution – distorting a circumplex into an ellipse.

Recall that the New Zealand and Japanese groups were not matched for age. The Japanese subjects were the mothers of pre school children, increasing their familiarity with the fluctuating moods of small children. There are also differences in the data collection procedure. But additive sorting is intermediate in nature between H sorting and F sorting. We analysed the NZ F sorts in isolation and compared them to the NZ split design H sorts; they are very similar.

Multidimensional scaling

It is difficult to make cross-cultural comparisons of perception of facial expressions by asking people to verbally identify expressions, since the verbal labels in the different languages may not be strictly synonymous. Words for emotions can vary in the levels of intensity they imply, and this can affect how applicable a word is to a given expression. Ekman and Matsumoto asked people to rate 48 expressions on how intensely they conveyed each of 7 emotions, on a 0–8 scale. But this confounds perceptual and linguistic variations.

MDS is a way of bypassing such possible queries. MDS also avoids the problems of context dependence which can affect how expressions are identified and rated.

Verbal descriptions of expressions and a MDS map of "expression space" are complementary. In a comparison across languages of the emotion labels used to describe a set of facial expressions (e.g. Russell, Suzuki & Ishida, 1993) the degree to which words are synonymous in the emotion lexicons of the contrasted cultures can be judged by creating counterparts to Figure 2, and comparing the "zones" or "sectors". This approach also allows one to specify how emotion terms differ: the extent and the way that the zones fail to overlap. If extending the I FEEL projective test to other cultures – specifying the coordinates for each term in an emotion lexicon, in order to quantify a subject's overall response – again, we need a modified Figure 2 for this purpose.

We agree that the different expressions corresponding to different underlying emotions involve quite distinct patterns of facial muscle contractions. But stimuli can fall into categories, and still fit into a spatial model. For example with colour we can represent "red" and "green" as sectors of a colour wheel, without denying that red and green stimuli produce quantitatively different experiences. There are continua, bridging the gaps between extreme, prototypal colours.

One approach in the study of facial expressions is to use stimuli of minimum ambiguity and maximum intensity: expressions with a single "right" identification. But in the real world one often encounters ambiguous expressions, open to more than one

interpretation, either because their intensity is low, or because signs are present of more than one underlying emotion. Among children, such blended emotions are the rule rather than the exception (Hiatt, Campos & Emde, 1979). Unblended emotions are an abstraction, akin to Platonic ideals.

These blended stimuli – expressions which straddle the boundaries between emotional categories – are less consistently pigeon holed, when subjects are asked to categorise them into a restricted set of emotions or "primary affects" provided by the researcher (the forced choice methodology). For the projective testing purpose which the I FEEL stimuli were selected for, this quality is desirable. It also makes them easier to map with MDS.

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CURRENT STATUS OF LEARNING DISABILITIES AND TEACHER TRAINING PROBLEMS IN JAPAN

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Abstract

The purpose of this paper is to report on the current status of special education of learning disabilities in Japan. The main issue is that the Ministry of Education still has not clearly defined their educational policy for children with learning disabilities. Although the Ministry of Education has promoted for a better understanding of learning disabilities among various schools, many classroom teachers in compulsory education experience difficulties when they have children with special needs in their own class. These difficulties are primarily due to not having the appropriate teaching skills can be attributed to a lack of appropriate teaching training. These are two factors to consider when addressing this problem with teacher training. First, on an international level, the Salamanca Statement and Framework for Action on Special Needs Education was published after the international conference in 1994 organized by UNESCO and the Spanish Ministry of Education. This statement emphasizes the importance of the initial teacher training as an educational policy. Second, at a local level, Japan now has a great number of study groups researching learning disabilities and support groups for children with learning disabilities and their parents (e.g., hospitals, volunteer agencies). The development of these groups emphasizes both the needs of this particular population and the unavailability of previous support for children with learning disabilities. A need for further reformation of initial teacher training is suggested.

Key Words: Learning disabilities, initial teacher training, Salamanca Statement

CURRENT STATUS OF SPECIAL EDUCATION IN JAPAN

As Anderson (1981) points out, traditionally, disabled people in Japan have had a low status in society. For example, it was difficult for disabled people to get suitable jobs; if they used wheelchairs, it was difficult to move along the side of roads because of the many obstacles in the road. The community itself did not welcome them and as a result, their families tended to hide them in shame and to support them by themselves. To ensure equal opportunities for education under the School Educational Law, every prefecture in Japan had to build a school for deaf and blind students; children with other disabilities were not taken into account in the public school system (Anderson 1981).

However, in 1973, the situation of this group started to change in a delightful way. Anderson (1981) describes these changes concisely in the following text :

> " the ministry of education, recognizing the right of every child to have an education, no matter how severe he is handicapped, decreed that the Compulsory Education Laws shall cover the handicapped as well, and that all prefectures must provide special schools for them by 1979. "
>
> " Parents and guardians of the handicapped are to be responsible for seeing to it that their children attend. " (p. 255)

Following the new legislation there were now three types of special education provisions, namely, special schools, special classes, and the visiting teacher program. Special schools now included schools for children with multiple, intermediate and physical handicaps, for the blind, and for the deaf. Special classes within mainstream schools were established for mentally retarded children, children with visual impairments, children with hearing handicaps, children with emotional disorders, children with physical handicaps, and children with language disorders. The visiting teacher program was set up for children with multiple, severe and physical handicaps. Special schools now provided education across the age range for students to attend from pre school through to high school, and, in addition, special classes were attached to ordinary elementary and junior high schools.. The size of these special classes was limited, while an ordinary class in elementary and junior high school had forty students, the special class legally could have only eight students per teacher.

CHILDREN WITH LEARNING DISABILITIES IN JAPAN

The special needs group that has been left out of the move to more equal provisions and to having their special educational needs met is this group of children who, in the United Kingdom are referred to as children with specific learning difficulties and in the U. S.A. as children with learning disabilities. In the earlier legislation, the needs of these children were not considered to be ' disabling ', and, thus, they were not included in decisions about additional provisions.

Although children with learning disabilities do not have status, teachers know there are certainly a number of children who have difficulties with learning in the basic subjects within their schools. So, where do these children with learning disabilities get support ?

Children with severe sensory or intellectual disabilities receive education in special schools or special classes. The total percentage of students attending such special schools is 1.1% in Japan, 1.7% in the U. K. and 2.4% in the USA. (Yamaguchi, 1992).

Yamaguchi (1992) makes the point that the percentage of children who are educated in schools for the blind, the deaf and in other types of special schools in the United States and in Japan are almost the same but that the percentage of students with these same disabilities who receive support in special classes within regular schools in Japan is only 0.5%. In the United States this percentage is 2.3%, that is, five times higher than Japan.

There are two major differences between the United States and Japan where the special class is concerned (Yamaguchi, 1992). Special class provision in the United States includes provision for gifted children as well as for children with learning disabilities. The other difference is that the U. S. A. offers some expert support for the special educational needs of children with learning disabilities who can help the regular class teacher.

Concerning children with learning disabilities in the mainstream school, the focus of this paper, Fujimoto (1992) undertook research to identify where these children were and what facilities they were provided with. They used as their sample 1500 members of the Parents Association for Learning Disabilities in Japan in December 1990. One thousand twenty parents responded (68% of the sample, high for a postal return). The data reveals that of the 211 children in Junior High School in their sample, 81.70% of them were receiving their education within the regular class, while of the 554 children in Elementary education, 73.30% were in the regular class. It is clear that, by far, the greatest majority of learning disability children remain in the regular class and that the range of provision for additional support is far greater at the elementary school level than it is at Junior High where 13.10% of learning disabled children find themselves in a separate special class. According to Fujimoto, children with learning disabilities in regular classes find it difficult to get support from their teachers to help them overcome their difficulties. Geshi (1992) suggests that this might be because many teachers in Japan still have little understanding of children with learning disabilities and, thus, might teach them using inappropriate methods or fail to deal with the problem at all. In general, in Japanese schools, a teacher has the maximum 40 students and, unlike the United States, Japan does not require every school to have a resource room with support services which a teacher might rely on. Geshi (1992) suggests that there is a good deal of responsibility placed on Japanese teachers to make sure that the majority of students are successful in their studies, and that, as a result of this, it is unlikely that a student with a learning disability will get the most out of their studies. The teacher has to focus on the majority and does not have the time, or the skills, to attend to specific problems.

In Japan, some parents are very aware of the problems which exist for their children and complain about governmental policies lagging behind where children with learning disabilities are concerned. They have run by hiring experts to teach their children and by creating free schools for children with learning disabilities, for example, the "Miharashidai Gakuen" school in Nagoya, or the "Free School Hishou" in Kanagawa.

SOME PROBLEMS IN RELATION TO PROVISION FOR CHILDREN WITH LEARNING DISABILITIES

In 1992, the writer had the opportunity to talk to the Parents Association for Children with Learning Disabilities in Chiba prefecture. The main problem for them, as they described it, was a lack of understanding on the part of regular class room teachers toward learning disabilities and the small number of teachers especially trained to work with this group of children. According to that group of parents, most of the children spend half of the day in the regular classroom without any additional help whatsoever. As the children move up through the grades, the subject content becomes more difficult for children with learning disabilities. Generally speaking, it is not easy for them to study

well in a large class and most do not have a chance to study in smaller groups or to have individual lessons. As the writer described before, with 40 students per class, the teacher is limited in time to help each individual child no matter how skilled that teacher may be. Most teachers, however, have little knowledge about learning disabilities, and the problems for the children get worse as they move up in school.

Many educators and researchers in Japan appeal for the government and the educational system to hurry up and deal with the problem. In particular, they point to the need for some specialists or trained teachers for learning disabilities (Geshi, 1992; Ueno, 1992). Basically, educators believe that it is possible to re-educate regular class teachers. To solve this problem, however, two points at least need to be considered: a) the necessity for all teachers to understand learning disabilities; b) the necessity for more trained teachers.

The problem, however, is not at all straightforward. Some fundamental problems are evident. One such problem is that there seems to be a lack of consensus in Japanese society about what learning disabilities are and how they might be provided for. Parents of children with learning disabilities often understand what is meant by the term, "learning disabilities", as a result of the problems their own children have, but teachers do not seem at all clear about its meaning. Two things are apparent here: first is the government of Japan does not have a definition of learning disabilities; and second is learning disabilities are not featured as a part of initial teacher training.

The Ministry of Education has stated that the definition of learning disabilities is still unclear and that methodology is divided in regard to teaching. However, they have positively acknowledged continuing basic research into learning disabilities although the status of children with learning disabilities is not yet considered as "special education".

In Japan, many researchers tend to follow the concept of learning disabilities which guides the United States although, according to Tongesen (1991), even the United States has not yet achieved a clear definition of learning disabilities. However, in this paper, we will define learning disabilities in the following terms, as adopted from the National Joint Committee on Learning Disabilities (NJCLD) and considered the most representative concept of learning disabilities in the United States.

> "Learning disabilities is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematics abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems in self regulatory behavior, social perception, and social interaction may exist but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions for example, sensory impairment, mental retardation, serious emotional disturbance or with extrinsic influences (such as cultural differences, insufficient or inappropriate instruction), they are not the result of those conditions or influences." (NJCLD Memorandum, 1988).

AN OUTLINE OF TEACHER TRAINING IN JAPAN

Basically, according to Iwanami Concise Educational Dictionary (1984), the content of subjects for a student teacher is divided into four main areas liberal arts, professional subjects at any level, curriculum for teacher and practice in teaching. Students, as part of their basic course work in teacher training, are not offered courses or studies about special educational needs. For example, the writer graduated in 1988 from a university teacher training program with mostly elementary school teacher course work, but had not received formal education about the curriculum related to special education.

The Warnock Report (1978) shows that at least one in five children in the U.K. might be expected to have some kind of special educational need during their school life and that most of these children would have those needs met within the regular class. We can certainly assume that a comparable percentage of Japanese children experience some difficulties with school work, and also Fjimoto (1992) states that most of these children are to be found in the regular classroom. It is not surprising therefore that teachers are faced with the problems of children with learning disabilities in the regular classroom that they have little idea of how to proceed. Can this situation be improved?

THE SALAMANCA STATEMENT AND FRAMEWORK FOR ACTION ON SPECIAL NEEDS EDUCATION

In 1992 UNESCO (United Nations Educational, Scientific and Cultural Organization) held a world conference on special needs education in Salamanca, Spain. The writer intends to refer to the agreement that resulted from the conference to get some thoughts about resolving some of the problems for learning difficulties for children in Japan. According to the Facts on File Dictionary of Education (1988), UNESCO is defined as an agency of the United Nations, formed in 1946, that has focused on general educational issues including, particularly, illiteracy and teacher preparation in the undeveloped countries of the third world. Japan is a member of this organization and has some role in it. The range of their interest was surprising, in particular, its work to enhance the right of " disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups (UNESCO, 1994)." While UNESCO tries to solve many difficult problems at a world level, the problem that seems most evident is that their ideas are not getting down to the level of actual teachers.

In 1990, UNESCO was central to the organization of a conference in Jomtien, Thailand. The agreement which came out of that conference was for those countries that signed the agreement to work to make 'education for all' their goal for the year 2000. The Jomtien Agreement (UNESCO, 1990) stated:

> Every person child, youth and adult shall be able to benefit from educational opportunities designed to meet their basic learning needs. These needs comprise both essential learning tools (such as literacy, oral expressions, numeracy and problem solving) and the basic learning content (such as knowledge, skills, values, and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development,

to improve the quality of their lives, to make informed decisions, and to continue learning (p. 3).

Disabled persons were identified as part of those groups whose needs had been overlooked in the past and that should be included in movements to improve both the access and quality of education, but it was the Salamanca Agreement which adapted disability as its single issue.

The Salamanca Statement (UNESCO, 1994) proclaims that :

1) every child has a fundamental right to education, and must be given the opportunity to achieve and maintain an acceptable level of learning.
2) every child has unique characteristics, interests, abilities and learning needs.
3) educational systems should be designed and educational programs implemented to take into account the wide diversity of these characteristics and needs.
4) those with special educational needs must have access to regular schools which should accommodate them within a child centered pedagogy capable of meeting these needs.
5) regular schools within this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all ; moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost effectiveness of the entire education system (p. 8-9).

It goes on to argue that all governments with international co-operation programs and international funding agencies, including the World Bank, should "endorse the approach of inclusive schooling and to support the development of special needs education as an integral part of all education programs" (UNESCO, 1994/p. 10).

The Salamanca Statement (UNESCO, 1994), in regards to the issue of inclusive schooling, recognized that the possibility of having separate special school provision for children with disabilities was not a sensible one in many developing countries. In many developed countries, this view of a more integrated educational system is now getting a lot of support, not just for financial reasons but because professionals, parents and disabled people themselves see the importance of disabled children being educated alongside those who do not have a disability. The issue for Japan, however, is that teachers are not prepared by receiving appropriate to support children with disabilities in the mainstream classroom.

A priority in planning to provide for more inclusive schools would need to be a comprehensive policy of teacher training. The Salamanca Statement (UNESCO, 1994) itself emphasizes that "pre-service training programs should provide to all student teachers, primary and secondary alike positive orientation toward disabilities" (p. 22).

It underlines the point that all student teachers need to attend pre-service training programs and to develop their understanding about inclusive schooling. In addition, they point out what student teachers need concretely "the knowledge and skills required are mainly those of good teaching and include assessing special needs, adapting curriculum content, utilizing assertive technology, individualizing teaching procedures to suit a larger range of abilities" (UNESCO, 1994/p. 27).

This is an ambitious and positive program for training. If this goal is achieved, then a lot of talented people would be working at all levels of the education system.

DEVELOPING TEACHER TRAINING IN JAPAN

The writer is unusual in that he has attended a specialist course in Japan after his initial teacher training. After working as a kindergarten teacher, he enrolled in a one year program A Provisional Training Course for Teachers of Children with Speech Disorders, offered by the Faculty of Education, Chiba University in Japan. The number of students in this course was seventeen, including five full time teachers who took sabbaticals from their schools in order to study. Chiba prefecture gives opportunities for full-time teachers in Chiba who wish to study Special Educational Needs to apply for local educational authority leave. The local educational authority then selects applicants by interview and exam and selected applicants then apply for scholarships. After completing their studies, the teachers can get new positions in which they will have opportunities to use their new skills. However, Chiba prefecture is unusual ; not every prefecture in Japan gives full time teachers scholarships like Chiba prefecture. The Ministry of Education does not require local authorities to do this, so there are no provisions nation wide.

There should be broader training in Japan, and the writer will now consider some aspects of this. In doing so, he will use the format devised by Hegarty (1992) in Professional Development : Educating Children and Young People with Disabilities. Hegarty (1992) asks seven questions in relation to issues of professional development and the writer would like to consider these in relation to Japan.

1. Where initial teacher training is the standard route into teaching, is there some coverage of disability issues in the basic training offered? How extensive is it? Is it related to teaching pupils with disabilities? Where available, is it part of the training curriculum followed by all students or is it optional, followed by some students only? (Hegarty, p. 56)

The answer to the first part of this question is "no, there is not." As we see from the curriculum presented earlier, the writer could not take a course related to disability issues and did not receive any exposure to training related to special educational needs in his initial training course. In Japan, we still have a segregated curriculum for initial teacher training, which sees children with disabilities as very different. We should move towards a curriculum that is more integrated and helps us to support more children in the mainstream class. As Hegarty (1992) points out, not all students need separate individual from specialists help but "a very great number of pupils with disabilities could be helped in ordinary school by relatively minor adjustments to the teaching provided in ordinary school" (p. 58).

2. Are training opportunities available for teachers specializing in educating pupils with disabilities? (Hegarty, p. 56)

In Japan there are six types of teacher training for special educational needs in

different areas of disability and the more general special educational needs for those who wish to specialize in this area. (Iwanami Concise Educational Dictionary, 1984; The Concise Dictionary for Special Education, 1986). These six types are

1) a short course of special education in the Faculty of Education in a University;
2) a one year special study course offered by the Faculty of Education;
3) a provisional training course for teachers of special educational needs on a year program offered by the Faculty of Education;
4) education by correspondence offered by the Faculty of Education;
5) a University course with a graduate school curriculum for full time teachers;
6) a course where a teacher can get a certificate for special educational needs, offered by the Ministry of Education, a local educational authority or a university summer course.

3. How does specialist training in this area relate to the general training provided to all teachers? (Hegarty, p.57)

Those wishing to specialize in teaching pupils with disabilities need to have basic teacher training first. Normally, in order to get a diploma in special education, a student teacher must have at least a diploma for teaching in a kindergarten, primary or secondary school (Concise Dictionary for Special Education, 1986). We can see that specialist training for teachers in Japan is based on the view that specialist teachers must have a good understanding of how to teach children without disabilities before undertaking specialist courses. This viewpoint is similar to that of the U.K.

4. Do all serving teachers have appropriate access to in service training in relation to teaching pupils with disabilities? Are they encouraged to take up the opportunities? What proportion of teachers actually receive in service training and how regularly? (Hegarty, p.57)

According to the Facts on File Dictionary of Education (1988), "in service training" is defined as

"1) Term used mainly in the public sector to refer to job related instruction educational experiences made available to employees. In service training programs are usually offered during normal working hours. However, some programs, especially, those offering college credit, are available to the employee only on his or her own time. 2) Activities designed to improve the knowledge and skills of employees and consequently, the quality of services, specifically instructional practices, provided. In service training is directed at those individuals who are already basically qualified and employed by school systems. In service training can be presented in a variety of courses. Some teachers continue their education by enrolling in university courses, local school districts and state education agencies may sponsor workshops, courses, or other continuing education activities. Profes-

sional organizations offer conferences and workshops. Teachers may travel and visit other programs to expand their professional growth" (p. 245).

As described in the above definition, Japan has a variety of programs for teachers, mainly during summer vacations. However, basically, Japan does not have a part time system of study at a university for further professional development, as seen operating in the U. K. If a teacher wants to study at a university, s/he must quit her/his job because the university requests all students to enroll as full time students. Some teachers can get scholarships from their prefectures or a sponsorship. However, they are limited, and only a few teachers are selected. Another problem is that if a teacher wants to study at a university, then s/he must receive permission from the local educational authority. In Japan, as long as the local educational authority controls the opportunity of the teacher to learn, it will not be easy for teachers to improve their professional skills at the graduate level. Therefore Japan should create a part time system for study at university.

5. Are classroom assistants given training for the important work they do? Do they have on the job opportunities to develop their skills? (Hegarty, P. 58)

According to the Concise Dictionary for Special Education (1986), a classroom assistant might serve deaf, blind or physically handicapped children at the school for the deaf, the blind and the more general special school. Each school is entitled to employ classroom assistants one person for schools for deaf children and blind children and three to five assistants for general special needs schools. Classroom assistants in Japan are available only to these specialist schools. There are no classroom assistants in ordinary schools. Classroom assistants do not need to get a qualified certification like teachers. As a result, they are not given training for this important work.

6. Is there any joint training for the different professionals involved in educating pupils with disabilities? Are there opportunities for them to share perspectives and build up common understanding about their respective contributions? (Hegarty, p. 58)

Some training does exist but only for very special purposes. According to Kamimura (1992), some hospitals have their own treatment programs for children with autism or children with learning disabilities. In such kind of programs, there are many professionals who can co-operate with each other medical doctors, psychologists, social workers and teachers. However, these are the exception in Japan. From the writer's own experience, for example, as a post graduate student he was able to attend some treatment programs in special classes of some elementary schools for four weeks. In this case, if a pupil with a language disorder, emotional disorder and so forth have a diagnosis made by a medical doctor, normally, the child might start a treatment with a special teacher at a special class of an elementary school. However, only the special teacher might be in a charge of treatment. Other professionals do not join in with this treatment program. This style is the most common in Japan. We do not have a team of staff that works with children who are placed in these special classes. Japanese professionals who

visit other countries, the United States for example, to see the advanced program in the area of learning disabilities are surprised at the treatment programs which involve so many professionals at all levels of the treatment program (Morinaga, 1992). Seeing this situation, it is clear that we lag a long way behind on joint training programs for professionals.

7. Is there a national plan for training staff concerned with educating pupils with disabilities? (Hegarty, p. 59)

The writer cannot really answer this question confidently because he does not have any information about a national plan for training staff at hand. However, in the area of learning disabilities, the Parents Association for Children with Learning Disabilities has strongly requested the Ministry of Education to increase the number of special teachers and to train other professionals who might work in this area. (Fujimoto, 1992). The Ministry of Education has just started to research learning disabilities; perhaps this is an indication that some consideration at a national level is being taken.

Even now the Ministry of Education still did not clearly state the definition of learning disabilities. However, they have continued studying learning disabilities and gradually have made some suggestions for schools in Japan. For example, in July 1998, they presented some of their suggestions in a report entitled, "Educating children with learning disabilities" (Masuda, 1998). In this report, they mainly addressed two points. One is that the Ministry of Education themselves needs to promote the understanding of learning disabilities to each school in Japan. Second is that each school needs to establish a curriculum with appropriate methods of teaching children with learning disabilities, working together with specialists in this area. Since the Ministry of Education started to study learning disabilities in 1994, they have not stopped. Step by step, they continue their studies. However, they have not yet announced their educational policy for children with learning disabilities. So, even though we know of their suggestions to us, we do not yet know of their concrete ideas related to teacher training in this field.

Although the Ministry of Education has been slowly considering learning disabilities, in Japan, a lot of study groups on learning disabilities or support groups for children with learning disabilities and their parents, such as hospitals and voluntary agencies, have been studying and helping them in their own ways. We can see their activities through the journals.

One of these study groups, Fukui LD Study Group in Fukui prefecture has developed a collaborative system of education and medical care for learning disabilities since 1989 (Hiratani et al. 1994). Members of this group are teachers, psychologists, medical doctors and parents. They have regular case conferences, treatment programs, annual summer camp, biweekly sports club and so on. Basically they are working together as volunteers. Their studies have revealed there to be five problems in working with learning disabilities the improvement of a diagnosis system, the approach to learning disabilities from a neurological science perspective, the longitudinal study of learning disabilities, the collaboration of Fukui parents association for learning disabilities, and the staff training. The problem of staff training for them is that compulsory educational teachers (elemen-

tary and junior high schools) seldom become members of this group. After teachers attend the study once, most stop coming again. This might show that many teachers do not concern themselves with the issue of about learning disabilities. According to a research of Fujimoto (1992), over 50 percent of parents who have children with learning disabilities say that school teachers of compulsory education do not understand children with learning disabilities well. The points by Hiratani et al (1994) and Fujimoto (1992) could be connected with the suggestion made by the Ministry of Education. Perhaps, they acknowledge that most schools in Japan do not have enough of an understanding about learning disabilities.

As the writer stated before, the initial teacher training in Japan is divided into two systems. Most of the ordinary school teachers have not taken courses offered on special education. So, they do not have the teaching skills to work with children with special needs. However, if they have a student with special needs in their class, how do they educate them? Shitara and Itoh (1997) studied trials and conflicts of the 22 ordinary class teachers in compulsory education who experienced teaching children with learning disabilities. From their study, we can clearly see that most of the teachers cannot concretely support their children and have difficulty for them to understanding learning disabilities. This might not be an unusual situation in Japan now. Many teachers may experience difficulties, as in the study above, when they have children with special needs in their own class.

Since many reports say that most of children with learning disabilities are in the ordinary classes of the compulsory education, the Ministry of Education or Schools should develop not only the in-service teacher training but also the initial teacher training in order to meet the needs of the children. During the initial teacher training, the Ministry of Education should develop a course in which student can learn teaching skills for working with children with special needs including learning disabilities. Actually, the Japanese parents association for children with learning disabilities requested the Ministry of Education to develop such a course for the initial teacher training (Fujimoto, 1992). The students at the teacher training college and the university do not need to experience the difficulties of teaching and not being able to support children with special needs.

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